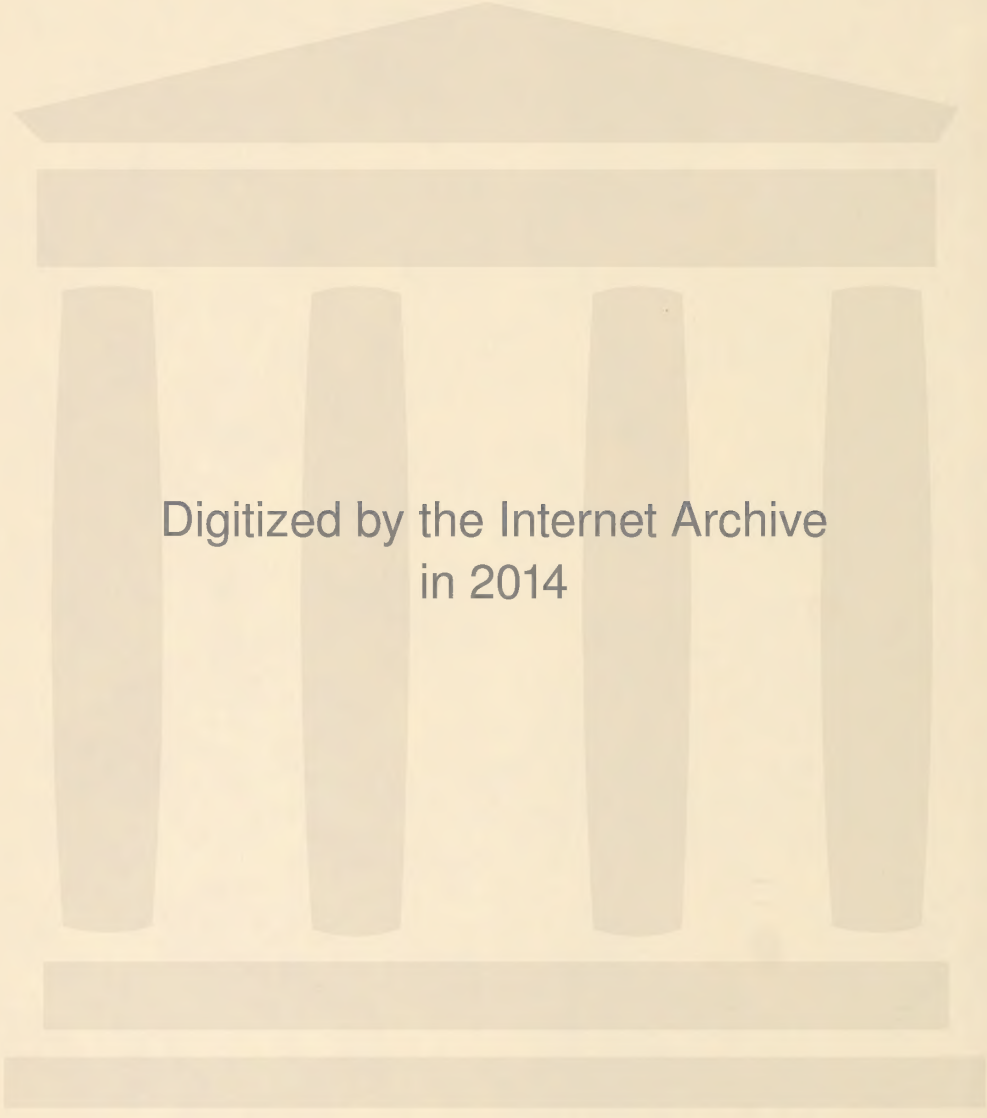
COLUMBIA LIBRARIES OFFSITE
HEALTH SCIENCES RESTRICTED
HR00275263

THE LIBRARIES

COLUMBIA UNIVERSITY

HEALTH SCIENCES
LIBRARY

NOV 27 1978 | JDR


Digitized by the Internet Archive
in 2014

https://archive.org/details/newyorkmedicaljo6318unse

THE

NEW YORK

MEDICAL JOURNAL.

A

WEEKLY REVIEW OF MEDICINE.

EDITED BY

FRANK P. FOSTER, M.D.

VOLUME LXIII.

JANUARY TO JUNE, 1896, INCLUSIVE.

NEW YORK:
D. APPLETON AND COMPANY,
72 FIFTH AVENUE.
1896.

COPYRIGHT, 1896.
BY D. APPLETON AND COMPANY.

LIST OF CONTRIBUTORS TO VOLUME LXIII

(EXCLUSIVE OF ANONYMOUS CORRESPONDENTS).

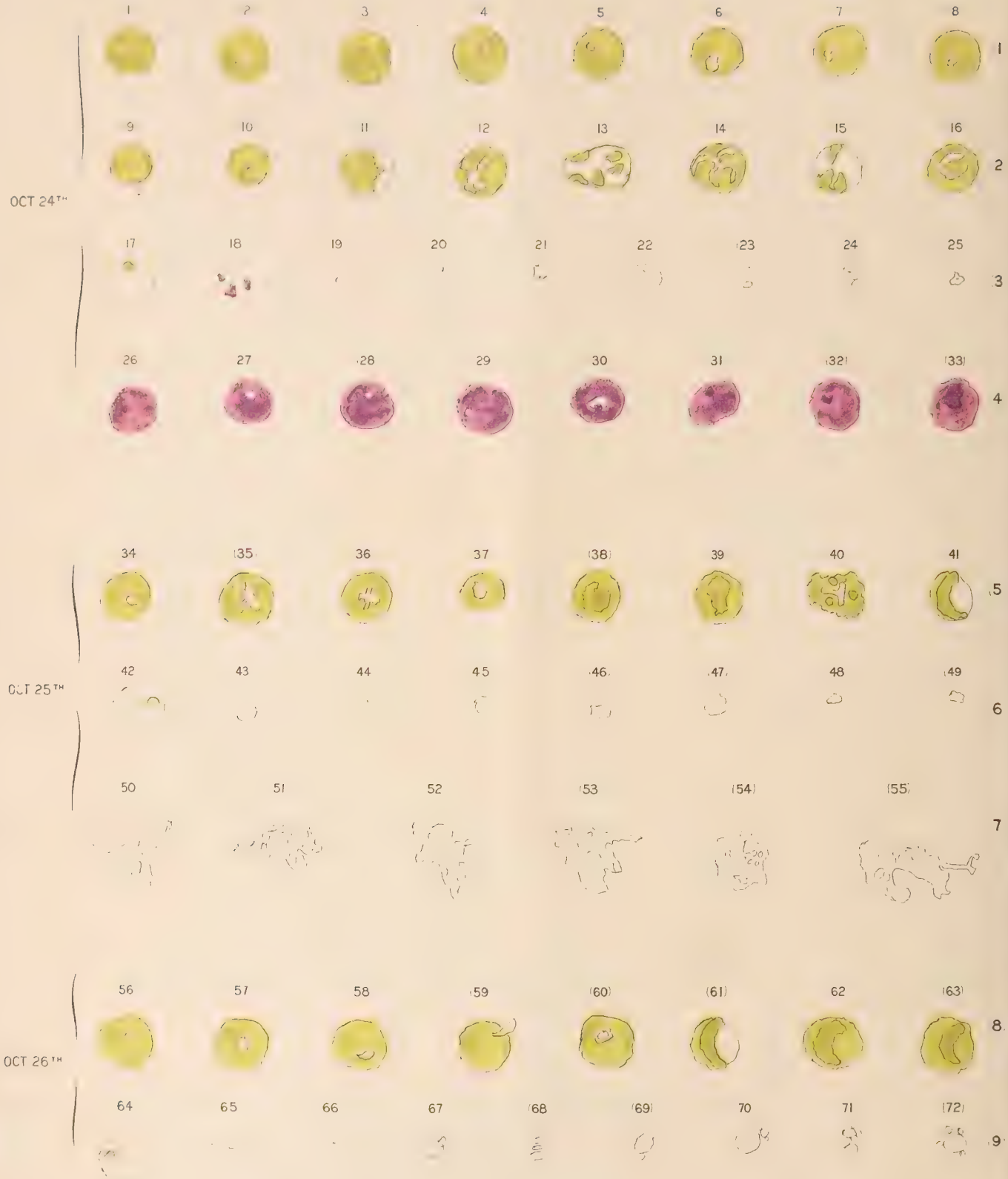
Those whose names are marked with an asterisk have contributed editorial articles.

ABRAMS, ALBERT, M. D., San Francisco.
ADLER, I., M. D.
ALEXANDER, SAMUEL, M. D.
AMBLER, C. P., M. D., Canton, O.
*ARMSTRONG, SAMUEL TREAT, M. D.
ARONSON, EMIL, M. D., Dallas, Texas.
ASHTON, W. EASTERLY, M. D., Philadelphia.
AUZAL, ERNEST W., M. D.
AXTELL, E. R., M. D., Denver, Col.
BAKER, F., M. D., Washington, D. C.
BARBER, C. F., M. D., Brooklyn.
BARRY, JOHN H., M. D., Long Island City, N. Y.
BATES, W. H., M. D.
BELLAMY, RUSSELL, M. D.
BEMIS, MORRIS N., M. D., Jamestown, N. Y.
BILLINGS, JOHN S., M. D.
BISHOP, LOUIS FAUGÈRES, M. D.
BLEYER, J. MOUNT, M. D.
BODENHAMER, WILLIAM, M. D., New Rochelle, N. Y.
BOLTON, PERCY, M. D.
BRACKEN, HENRY M., M. D., Minneapolis, Minn.
BRANNAN, JOHN WINTERS, M. D.
BRATTON, W. D., M. D., Albuquerque, New Mexico.
BREMER, L., M. D., St. Louis.
BREWER, GEORGE EMERSON, M. D.
*BRICKNER, S. M., M. D.
*BRONSON, EDWARD BENNET, M. D.
BROWN, W. S., M. D.
*BULL, CHARLES STEDMAN, M. D.
BUSH, J. FOSTER, M. D., Boston.
CALLAN, PETER A., M. D.
CANFIELD, HERMAN, M. D., Bristol, R. I.
CANTRELL, J. ABBOTT, M. D., Philadelphia.
CARSTENS, J. H., M. D., Detroit.
CHAPPELL, WALTER F., M. D.
CHITTENDEN, R. H., Ph. D., New Haven.
CLEMENTS, JOSEPH, M. D., Kansas City, Mo.
COE, HENRY S., M. D.
COGGESHALL, G. A., M. D., Oxford, N. C.
COLEY, WILLIAM B., M. D.
*COLLES, C. J., M. D.
COOKE, ALMON H., M. D., Buffalo.
CORDELL, EUGENE F., M. D., Baltimore.
CORSON, JOSEPH T., M. D., United States Army.
CRAIG, THOMAS C., M. D., United States Navy.
CURRIER, A. F., M. D.
CURTIS, GEORGE LENOX, M. D.
*CUTLER, COLEMAN W., M. D.
CUTTER, JOHN A., M. D.
*DADE, C. F., M. D.
DANA, CHARLES L., M. D.
DANE, JOHN M., M. D., Boston.
DAVIS, A. EDWARD, M. D.
DEEKS, W. H., M. D., Philadelphia.
*DELAVAN, D. BRYSON, M. D.
DICKEY, JOHN L., M. D., Wheeling, W. Va.
DILLER, THEODORE, M. D., Pittsburgh.
DROGE, JOHN H., M. D., Brooklyn.
DUNGLISON, RICHARD J., M. D., Philadelphia.
DYAR, HARRISON G., A. M., Ph. D.
EDGAR, J. CLIFTON, M. D.
EDLÉN, E. A., M. D , Moline, Ill.
EINHORN, MAX, M. D.
ELLIOTT, ARTHUR R., M. D., Chicago.
EWING, JAMES, M. D.
FERGUSON, F. U., M. D., Gallitzin, Pa.
FISCHER, LOUIS, M. D.
FLANDERS, LOUIS W., M. D., Dover, New Hampshire.
FLETCHER, ROBERT, M. D., Washington, D. C.
FORD, JOSEPH HERBERT, B. S., A. M., Washington, D. C.
*FOSTER, FRANK P., M. D.
FOSTER, HAL, M. D., Kansas City, Mo.
*FOSTER, M. L., M. D.
FREEBORN, GEORGE C., M. D.
FRENCH, WILLIAM B., M. D., Washington, D. C.
FREUDENTHAL, W., M. D.
GIBBS, JOHN BLAIR, M. D.
GOLDSTEIN, SAMUEL, M. D.
GORDON, ONSLOW ALLEN, M. D., Brooklyn.
GOULD, GEORGE M., M. D., Philadelphia.
*GRANGER, REED B., M. D., Brooklyn.
GRAY, LANDON CARTER, M. D.
GREEN, GEORGE R., M. D., Muncie, Ind.
GRIFFIN, E. HARRISON, M. D.
*GRIFFIN, HENRY A., M. D.
GROSS, M., M. D.
GUITÉRAS, RAMON, M. D.
HAMILTON, ALLAN McLANE, M. D.
HASBROUCK, EDWIN M., M. D., Washington, D. C.
HEATH, F. C., M. D., Indianapolis.
HENGST, D. A., M. D., Pittsburgh.
HETT, J. E., M. D., Berlin, Ontario.
HEUEL, FRANZ, M. D.
HEWETSON, S. W., M. D., Saranac Lake, N. Y.
*HOBBS, A. B., M. D.
HOLMES, BAYARD, M. D., Chicago.
HOTCHKISS, L. W., M. D.
HOWE, LUCIEN, M. D., Buffalo.
HUBBARD, THOMAS, M. D , Toledo, O.
HUPP, FRANK LEMOYNE, M. D., Wheeling, W. Va.
INGLIS, JOHN, M. D., Columbus, O.
INGRAHAM, CHARLES WILSON, M. D., Binghamton, N. Y.
IZLAR, R. P., M. D., Ocala, Fla.
*JACKSON, FRANK W., M. D.
JACKSON, GEORGE THOMAS, M. D.
JACOBI, A., M. D.
JACOBY, GEORGE W., M. D.
JOHNSON, A. B., M. D.
KAUFMANN, J., M. D.
KELLEY, SAMUEL W., M. D., Cleveland.
KELLY, ALOYSIUS O. J., M. D., Philadelphia.
KELLY, J. E., M. D.
KELSEY, CHARLES B., M. D.
KELSO, H. J., M. D., Knoxville, Tenn.
KEMP, ROBERT COLEMAN, M. D.
KETCH, SAMUEL, M. D.
KILIANI, OTTO G., M. D.
KNIGHT, CHARLES H., M. D.
KOPLIK, HENRY, M. D.
KOSSMANN, ——, M. D., Berlin.
KRAUSS, WILLIAM C., M. D., Buffalo.
KREIDER, GEORGE NOBLE, M. D., Springfield, Ill.
LAMBERT, SAMUEL W., M. D.
*LEE, FREDERICK S., M. D.
*LESZYNSKY, WILLIAM, M. D.
LEWIS, W. MILTON, M. D., Baltimore.
LICHTSCHEIN, LOUIS, M. D.
LINDSEY, CLIFF, M. D., Lewiston, Mont.
LOVELAND, BRADFORD C., M. D., Clifton Springs, N. Y.
LOVETT, R. W., M. D., Boston.
LUDLOW, OGDEN C., M. D.
MABBOTT, J. MILTON, M. D.
MALLETT, E. PIERCE, M. D.
MANLEY, THOMAS H., M. D.
MANN, M. D., M. D., Buffalo.
MARCY, HENRY O., M. D., Boston.
*MARKOE, F. H., M. D.
*MARKOE, JAMES W., M. D.
MARX, S. M., M. D.
MAYER, EMIL, M. D.
MAYS, THOMAS J., M. D., Philadelphia.
McCASSY, J. H., M. D., Dayton, O.
McCOSH, ANDREW J., M. D.
McDOWELL, W. J., M. D., Baltimore.
MEIERHOF, E. L., M. D.
METCALFE, ORRICK H., M. D.
MEYER, JOHANNES, M. D., Brooklyn.
MEYER, WILLY, M. D.
MILBURY, FRANK S., M. D., Brooklyn.
MILLS, HARRY B., M. D., Philadelphia.
MILLS, WALTER S., M. D., Stamford, Conn.
MILLS, WESLEY, M. D., Montreal, Canada.
MITCHELL, S., M. D., Hornellsville, N. Y.
MOORE, JAMES E., M. D., Minneapolis, Minn.
MORTON, H. McI., M. D., Minneapolis, Minn.
MORTON, WILLIAM J., M. D.
MOSER, WILLIAM, M. D.
MUNSON, EDWARD L., M. D., United States Army.
MUREN, G. MORGAN, M. D., Brooklyn.
MUZZY, ARTHUR T., M. D.
NEWCOMB, JAMES E., M. D.
NEWTON, R. C., M. D., Montclair, N. J.
NORBURY, FRANK P., M. D., Jacksonville, Ill.
NOYES, WILLIAM B., M. D.
O'CONOR, J., M. D., Buenos Aires.
OHLMACHER, A. P., M. D., Cleveland.
OLIVER, CHARLES A., M. D., Philadelphia.
OTIS, EDWARD O., M. D., Boston.
PAQUIN, PAUL, M. D., St. Louis.
PARK, FRANCIS EDWIN, M. D., Stoneham, Mass.
PARK, ROSWELL, M. D., Buffalo.
PATRICK, HUGH T., M. D., Chicago.
PEARSE, HENRY SEYMOUR, M. D., Albany.
PERRY, J. L., M. D.
*PETERSON, FREDERICK, M. D.
PHELPS, CHARLES, M. D.
PILCHER, LOUIS S., M. D., Brooklyn.
POLAK, JOHN O., M. D., Brooklyn.

PRESTON, GEORGE J., M. D., Baltimore.
QUINLAN, FRANCIS J., M. D.
RANNEY, AMBROSE L., M. D.
RAYNOR, FRANK C., M. D., Brooklyn.
REED, BOARDMAN, M. D., Atlantic City, N. J.
*REED, CHARLES A. L., M. D., Cincinnati.
REEVE, J. C., Jr., M. D., Dayton, O.
RICHARDSON, GEORGE T., M. D., Cayuga, Ind.
RIVES, WILLIAM C., M. D.
ROBINOVITCH, LOUISE G., M. D., Brooklyn.
ROBINSON, BYRON, M. D., Chicago.
ROOSA, D. B. St. JOHN, M. D.
ROOT, FRANK W., M. D., Kent, O.
*ROSE, ACHILLES, M. D.
ROSENBERG, JULIUS, M. D.
ROWLEY, W. S., M. D., San Antonio, Texas.
SACHS, B., M. D.
SCHADLE, J. E., M. D., St. Paul.
SCHAMBERG, J. F., M. D., Philadelphia.
SCHELL, WALKER, M. D., Terre Haute, Ind.
SCHEPPEGRELL, WILLIAM, M. D., New Orleans.
SCHWYZER, F., M. D.
SCOTT, J. F., M. D., Washington, D. C.
SEABROOK, H. H., M. D.
SEIBERT, A., M. D.
SEMPLE, J. M., M. D., Spokane, Washington.
SHAFFER, NEWTON M., M. D.
SHANNON, JOHN R., M. D.
SHEPPARD, J. E., M. D., Brooklyn.
SHROPSHIRE, L. L., M. D., San Antonio, Texas.
SIMPSON, FREDERICK T., M. D., Hartford, Conn.
SKINNER, C. E., M. D., New Haven.
SMITH, E. D., M. D., Chicago.
SMITH, FRANK TRESTER, M. D., Chattanooga.
SMITH, R. PERCY, M. D.
SOMERS, LEWIS S., M. D., Philadelphia.
*SOUTHWORTH, T. S., M. D.
SPALDING, WARREN C., M. D.
SPIVAK, C. D., M. D.
*STIMSON, LEWIS A., M. D.
STOVALL, J. H., M. D., Columbia, Ala.
STURGIS, F. R., M. D.
*TAYLOR, HENRY LING, M. D.
*TAYLOR, ROBERT W., M. D.
TESCHNER, JACOB, M. D.
THAYER, C. C., M. D., Clifton Springs, N. Y.
THAYER, WILLIAM SYDNEY, M. D., Baltimore.
THOMPSON, R. A., M. D., Norwich, N. Y.
THOMSON, WILLIAM H., M. D.
TOUSEY, SINCLAIR, M. D.
TOWNSEND, CHARLES W., M. D., New Brighton, N. Y.
TOWNSEND, WILLIAM WARREN, M. D., Rutland, Vt.
TULEY, H. E., M. D., Louisville, Ky.
*TURCK, FENTON B., M. D., Chicago.
TUTTLE, GEORGE M., M. D.
*TUTTLE, JAMES P., M. D.
TWITTY, F. S., M. D., Columbia, Ala.
TYSON, JAMES, M. D., Philadelphia.
VALENTINE, FERD. C., M. D.
VAN FLEET, FRANK, M. D.
VAUGHAN, GEORGE TULLEY, M. D., Marine-Hospital Service.
VINEBERG, HIRAM N., M. D.
WALTON, G. E., M. D., Miami, Fla.
WATSON, WILLIAM PERRY, M. D., Jersey City.
WEILAND, CARL, M. D., Philadelphia.
WESSINGER, J. A., M. D., Ann Arbor, Mich.
WHITAKER, F., M. D., Point Pleasant, N. J.
WHITE, A. J.
WHITMAN, ROYAL, M. D.
WHITNEY, F. WALDO, M. D.
WIGHT, JARVIS S., M. D., Brooklyn.
WILDER, BURT G., M. D., Ithaca, N. Y.
WILLIAMS, L. L., M. D., Charleston, S. C.
WILSON, NORTON L., M. D., Elizabeth, N. J.
WINTERS, JOSEPH E., M. D.
WOLDERT, E. A., M. D., Tyler, Texas.
WOLFE, SAMUEL, M. D., Philadelphia.
WOOD, WILLIAM C., M. D., Gloversville, N. Y.
WRIGHT, JONATHAN, M. D., Brooklyn.
WYETH, JOHN A., M. D.
YOCOM, JAMES R., M. D., Tacoma, Washington.

LIST OF ILLUSTRATIONS IN VOLUME LXIII.

	PAGE
Malarial Hæmaturia..... Plate facing	1
A Pile Forceps and Hysterectomy Clamp.....	27
Hypertrophic Pulmonary Osteo-arthropathy and Acromegaly..... Four Plates, Ten Figures, facing	33
Diagrams of Negative and Positive Venous Pulse.....	74–76
Local Peritonitis. Two Illustrations.....	103–107
Venous Phenomena. Diagram.....	112
Rhinoscleroma. Three Illustrations.....	134, 135
Adjustable Self-retaining Nasal Speculum.....	159
The Improved Gyromele.....	191
The Diagnosis of Hysteria. Nineteen Illustrations..	200–202
The Diagnosis of Hysteria. Twelve Illustrations....	235–240
A Röntgen Picture of a Hand..... Facing	265
Tuberculous Abscess. Thirteen Illustrations.....	268–272
Diagnosticating Diabetes from a Drop of Blood. Plate facing	301
Affections of the Arch of the Foot. Sixteen Illustrations.....	304–308
A Röntgen Picture of Bones of Hand..... Facing	333
Lumbar Puncture of an Intradural Hæmatoma of the Spinal Cord.....	334
Sporadic Cretinism. Three Illustrations.....	335
Acute Bulbar Paralysis. Diagram.....	342
Ureteral Catheter.....	370
Skin Curette.....	403
Double-current Vaginal Irrigator.....	429
Röntgen Picture of Bones of the Foot..... Plate facing	469
Bilateral Neuritis of the Brachial Plexus. Four Illustrations.....	469, 470
Papilloma of the Soft Palate.....	470
Primary Sarcoma of the Orbit. Four Illustrations..	508, 509
Tongue Forceps.....	512
Röntgen Picture of Bones of Wrist and Hand. Plate facing	516
Röntgen Pictures. Four Illustrations.....	537–540
Röntgen Picture of an Infant Nine Weeks Old. Inset..	540
Nitze's Ureter Cystoscope.....	541
Electro-therapeutical Cabinet. Two Illustrations.....	595
Excision of the Cervix Uteri. Diagram.....	607
Machine for tubing Bacterial Media.....	657
Rotary-lateral Curvature of the Spine. Six Illustrations.....	667
Chancres found in Unusual Localities. Ten Illustrations.....	670–672
The Malarial Organism..... Plate facing	674
The Action of Serum on the Blood. Seven Illustrations	733–736
Undescribed Neuroses of the Lungs. Two Illustrations	768
Mechanics and Treatment of the Broken-down Foot. Eight Illustrations.....	796–800
Subjective Optometry. Six Diagrams.....	801, 802
Meckel's Diverticulum.....	809



DR. WOLDERT'S CASE OF MALARIAL HÆMATINURIA.

LINE 1. Fig. (1) represents a normal red corpuscle. Hyaline bodies seen in the other red cells.
" 2. Represents phases of different intracorpuscular bodies observed for about twenty minutes.
" 3. Fig. (17), leucocyte containing a round brownish body. Fig. (18), free hæmatin. Other figures represent extracellular hyaline bodies.
" 4. Stained specimen (method of Plehn). Bluish bodies seen in Figs. (31), (32), (33). Vacuoles present in some of the others.
" 5. Specimens observed on October 25th.
" 6. Extracorpuscular bodies of different sizes and shapes without pigment. Fig. (42), leucocyte containing brownish body.
" 7. Different phases assumed by a phagocyte within twenty minutes.
" 8 Intracorpuscular bodies observed on October 26th.
" 9 Fig. (64), leucocyte containing round brownish body. Figs. (65), (66), hyaline forms. Others represent gemmation process

Original Communications.

A CASE OF MALARIAL HÆMATINURIA,

WITH A STUDY OF THE PLASMODIUM.

BY E. A. WOLDERT, PH. G., M. D.,

TYLER, TEXAS,
FORMERLY RESIDENT PHYSICIAN TO MERCY AND ROSELIA HOSPITALS, PITTSBURGH, PA.

MR. JOHN R., aged sixty-two years, color white, an employee of the St. Louis Southwestern Railway, and has been living for the past three months along the line of the railroad, drinking creek water and sleeping in section houses at night. Admitted to the St. Louis Southwestern Railway Hospital October 23, 1895.

Family History.—His father and mother had usually enjoyed good health, but his mother in the latter part of her life had had cancer of the breast, from which she had died. His father had died of old age.

The patient had had four brothers, two of whom had been killed during the war. The cause of death of the others was unknown. One sister had died during parturition.

Previous History.—He had had the usual diseases of childhood, and had usually enjoyed good health, with the exception of numerous attacks of chills and fever in youth, and then every few years since that time. These attacks had usually been relieved by quinine. Twenty years ago he had a severe attack of malarial fever (chills and fever) while living in Maryland, and during the latter part of this attack suffered from ascites, also œdema of the lower extremities. He was confined to bed for nearly two years. Complete recovery followed, but he suffered at intervals with chills and fever, for which he used patent medicines.

Present Illness.—It seems to date back to about three months ago, when he began to suffer with "dumb" chills followed by fever. These cold spells would come over him once or twice during the day, to be again repeated at night.

On the 19th of October of this year he had his first "shaking" chill, and thinks this was followed by the highest fever since the commencement of the trouble. There has been a chill followed by fever each day subsequently until his entrance into the hospital.

Development of Hæmatinuria.—On October 20th the urine remained clear as usual, and in the early morning of the 21st he observed that the urine had changed to a bright red color, and he has been continuously passing such urine since, though it appears now to be of a lighter hue. There is no pain on passing urine.

He took quinine (probably five grains every four hours) on the 19th and 20th of October; none before or afterward until his entrance into hospital.

Development of Icterus.—Severe jaundice developed on the following day after his observing the red coloration of the urine. He began to turn yellow all over the body uniformly (his complexion is usually fair).

Physical Signs.—He is a well-preserved man; appears bright; the face and body are of a dark-lemon color; the body not so highly pigmented as the face (the skin does not itch); the sclerotic coats of the eyes are lemon yellow; the gums and conjunctivæ have a blanched and very anæmic appearance; the tongue is pale and moist; down the centre is a thick yellowish streak extending not quite to the tip.

A hæmic murmur is heard during the systole over the aortic area, transmitted to the vessels of the neck on slight exertion, and soon disappearing; also indistinctly heard over the apex of the heart. The lungs are normal.

The liver dullness is normal; there is no tenderness. There is no evidence of cancer, cirrhosis, or abscess.

The spleen is slightly enlarged and is tender on deep pressure.

Examination of the Blood, October 24th.—Time, 10.20 A. M. One twelfth oil-immersion lens, No. 5 ocular (Leitz). Temperature, normal; pulse, 84. Blood obtained from the lobe of the ear. Time of observation, two hours. Warm stage.

Appearance of the Parasites.—Numerous small hyaline, round, and irregularly shaped bodies of many sizes could be seen in each field within and without the red blood-corpuscles, actively dancing and continuously altering their contour. The sizes ranged from about a thirtieth to half the size of a red cell. Only a few specimens were seen to contain a small dotlet of pigment, which was limited to the larger sizes. Those without the cells were more active than those within.

Fig. 9 shows a cell of about the same color as a normal red globule and slightly smaller, with a small hyaline amœboid body attached to its lower surface. When first seen this body was outside the red disc, and before a half minute ensued could be seen within the area of the erythrocyte (probably overlying it?) (Fig. 10), which changed its position to various parts of the cell, constantly altering its shape, but generally of a round form. After overlying (?) the red cell it again became attached to the outer rim of the red globule. A hyaline body similar to this one was thought to have become detached from the red cell by slightly jarring the slide.

Successive Phases of a Parasite observed for about Twenty Minutes.—Fig. 11 represents the first stage. It then assumed various shapes so quickly that they could not be drawn. Within a few seconds, however, four bright hyaline zigzag-shaped lines would come into view, radiating from the centre (Figs. 12 and 14), and a few seconds later become as shown in Fig. 13. In this latter (Fig. 13) the coloring matter of the cell seemed to be broken up into fragments only to reunite and assume a new shape very rapidly.

In one specimen only three of the zigzag-shaped lines radiated from the centre. In another the hyaline body collected in the lower portion of the cell and threw out a narrow hyaline limb. Often the body appeared to flatten out and spread over the greater part of the area of the cell, and, breaking up the coloring matter into fragments, would quickly again coalesce; as, for instance, Fig. 14, first stage; Fig. 15, second stage; Fig. 12, third stage; and Fig. 16, fourth stage.

The four hyaline limbs radiating from the centre (Fig. 14) occurred a greater number of times than any other form.

No crescents were seen on this day.

Fig. 23 represents two extracellular amœboid bodies close together. Fig. 24 shows the same bodies with an irregularly shaped loop between them, the lower one somewhat larger.

Fig. 17 represents a leucocyte containing a small round body (without motion) of the same color as a red cell. Several irregular clumps of pigment of a garnet color (Fig. 18) were observed free in the plasma.

No phagocytes were observed, and no flagellate bodies. There were a few leucocytes.

The same specimen was stained (by the method of Plehn). Only a very limited number of the small round and irregular bodies took the blue stain. Many clear, glistening, unstained round bodies could be seen within the red cells (these may be seen in normal blood after being heated).

Only one good specimen was detected within a red cell; it was small and irregularly pear-shaped (Fig. 33). The white spots in Figs. 27, 28, 29, and 30 are probably vacuoles.

No eosinophile cells.

Examination of the Urine, October 24th, 5 P. M.—The urine, which had been (the night before and the morning of the same day) of a bright red, became of a light amber color when next passed, at 5 P. M. (which was six hours after being red). The urine was highly acid, specific gravity 1·005 (it is necessary to remember that in hæmaturia the urine is usually alkaline and the specific gravity greater than in hæmatinuria), and by Heller's method a faint whitish zone was produced at the point of contact of the two liquids, indicating albumin.

Microscopically three quarters of an hour afterward—No. 3 lens, No. 1 ocular (Leitz)—a small portion of the whitish sediment showed amorphous urates, granular *débris*, and a large, irregularly-shaped clear crystal.

No red blood-corpuscles, no casts.

Blood Examination, October 25th.—Time, 10.30 A. M., No. 7 lens, No. 5 ocular (Leitz), warm stage. Blood obtained from the lobe of the ear. Pulse and temperature normal. Time of observation, an hour and a half. A much larger proportion of the cells were now affected by the larger-sized organisms of different shapes without pigment.

No special variety prevailed unless it was the crescents within the red cells; these crescents contained no pigment (Fig. 41) and were often darker than the normal color of red cells. Fig. 37 was also quite frequent, and often, instead of the parasite being of a hyaline color, it would even be darker than the surrounding normal coloring matter of the red cell and without motion or pigment.

Bodies of the same color as the latter are also shown in Figs. 38 and 39. Fig. 39 is a very common form. Similar hyaline bodies have been seen. But few of the small hyaline amœboid segments within the red cell, quite a large number extraglobular. Several were of a quarter of the size of a red corpuscle. There were no garnet masses free in the plasma.

Fig. 42 shows a leucocyte containing a body similar to Fig. 17.

Phagocytes were very prevalent, but assumed different shapes so rapidly that all successive stages could not be drawn; but the different figures represent correct pictures of a few of them (see Figs. 50, 51, 52, 53, 54, and 55).

Figs. 35 and 36 show bodies which may be classed as doubtful parasites, as they were specially noticed after the stage had become rather hot. They had no movement. Figures similar to these have, however, been seen by more experienced observers.

Another examination of the same urine of October 24th, 12 M., confirms yesterday's examination; in addition there are triple phosphates (small); some dark-colored masses; no red blood-corpuscles; no casts.

Examination of Blood, October 26th, 4.30 P. M.—No. 7 lens, No. 5 ocular (Leitz). Time of observation, an hour. Blood obtained from the lobe of the ear.

At the time of examination, pulse, 80; temperature, 99°. On examining the blood this afternoon, what was specially striking was the greatly increased number of intracorpuscular crescent-shaped parasites and round, hyaline, extracellular forms, ranging in size from those just discernible to others of almost three quarters the size of a red disc.

Often a dozen or more of these extraglobular glistening segments could be observed in each field.

Out of many fields observed only one segment was seen to contain a small dot of very black pigment near the centre (Fig. 65).

Fig. 59 represents an irregular parasite partially extruded from the corpuscle, which is quite common.

Figs. 61, 62, and 63 show crescent-shaped organisms darker in color than the surrounding normal color of the red cell.

In some cases the corpuscle did not seem to be decolorized, while in others the corpuscle was represented by a faint pale rim attached to the concave border of the hæmatozoa (Figs. 41 and 61).

None of the large, irregular, pear-shaped parasites (Fig. 39) observed the previous day can now be seen.

Very little pigment free or within the bodies. A number of decolorized red cells of a homogeneous appearance observed. One or more phagocytes to each field.

In one specimen the phagocyte had engulfed a crescent-shaped organism with a portion of a red cell attached, but it afterward became disengaged, receded, and assumed a round shape.

Fig. 64 represents a leucocyte containing a round body, observed on October 24th, Fig. 17, and October 25th, Fig. 42.

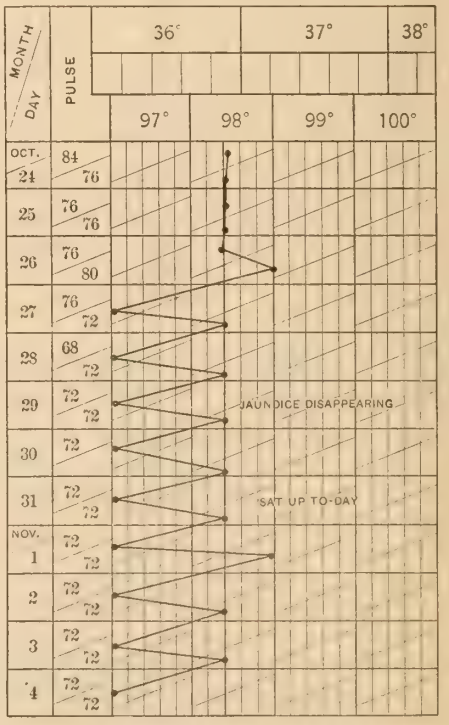
Figs. 67, 68, 69, 70, 71, and 72 represent bodies supposed to be a degenerative (gemmation) process of the organism of this type of fever.

Blood Examination, November 4th.—Time, 9.30 A. M. One twelfth oil-immersion objective, No. 5 ocular (Leitz). Blood obtained from the end of the finger. Time of observation, about thirty minutes. Temperature subnormal, pulse 72. Cold stage.

What was specially characteristic was the existence of leucocytosis to a marked degree. Only a few extracellular hyaline round bodies without pigment; none observed within the red cells. A few crescents within the red discs, but contained no pigment.

The corpuscles have assumed, as a rule, a more normal hue and outline, although poikilocytosis is present to a limited extent.

The hæmic murmur can not now be heard.



Treatment.—On the patient's entrance, the following prescription was given:

℞ Sodii bicarb..... 0·80
Hydrarg. chlor. mit..... 0·50
Pulv. ipecac..... 0·07
M. div. in chart. no. iij.
Sig.: Take one powder every hour.
Bowels acted twice.

October 24th.—At 9.30 A. M. ten grains of quinine with five drops of dilute nitrohydrochloric acid were ordered three times a day, which was continued until October 26th, when only half the amount was given three times daily.

29th.—The quinine prescription was discontinued, and the patient was given a prescription for iron and arsenic.

Result.—Discharged cured, November 11th.

NOTE.—Through the kindness of Dr. C. A. Smith, chief surgeon of the St. Louis Southwestern Railway, I have been permitted to examine this patient, and have been assisted both in the work and in procuring a more complete history of the case by Dr. F. W. Swindall and Dr. J. F. Moore of the hospital staff. Am also under many obligations to Mr. J. W. Smiley for favors.

THE ARID-REGION SANITARIUM

FOR TUBERCULOUS PATIENTS OF THE MARINE-HOSPITAL SERVICE.

BY W. D. BRATTON, M.D.,
PASSED ASSISTANT SURGEON, U. S. MARINE-HOSPITAL SERVICE, ALBUQUERQUE, NEW MEXICO.

IT was in the year 1798 that the Congress of the United States first recognized the expediency and propriety of caring for seamen who became sick or disabled in the pursuit of their calling. The national legislature was moved to take action in this matter, not through the influence or by the appeals for help of the seamen themselves, for they alone, of all the classes of our citizens, have never begged for anything, nor sought to influence Congress in their own behalf. On the contrary, the nation's representatives were stirred by public opinion in seafaring communities and in the commercial centres on the great lakes and rivers of the country, where sympathy with the seaman was naturally strongest, and where a knowledge of all the ills to which he was subject was universal.

These people recognized fully that the seaman had to give up the hope of a home and of accumulating a competency for his old age; that his habits of life were to some extent necessarily demoralizing, and peculiarly unfitted him for making his living in any other way; that, from the nature of his employment, he was exposed to hazards of fortune and risks to health and life to which the landsman is a stranger; that, finally, in disease and disabling injury he was far removed from the help and sympathy of family and friends. These things appealed strongly to the humanity and sympathy of seafaring communities.

But there was not wanting also an appeal to their sense of justice, when they reflected that these men had devoted their lives to the maintenance of internal communications and, consequently, to the building up of the widely separated regions of this vast country at a time when there were no railroads, when malarial and infectious diseases were rife, and when, consequently, this work was more arduous and more perilous by far than seagoing life now is. It was also recognized that these men gave up all the ties that, to a landsman, make life worth living, in order to maintain our relations with the rest of the world in time of peace, and that in time of war on them alone we relied to protect our coasts from foreign invasion.

When, therefore, to these considerations was added the moving spectacle of seamen cast ashore by scores and hundreds to suffer or die in want and neglect almost absolute, it is not strange that strong appeals were made to Congress in their behalf, and it is not hard to understand why these appeals met with so prompt a response.

It is true, then, that nearly a century ago the national government undertook to see that sick and disabled seamen of the merchant marine were properly cared for. It is equally true that from that day to this the government has never receded from the position thus assumed, but has moved forward to positions successively stronger. At first it prescribed a tax to be collected from the seamen themselves, and disbursed at the ports where collected for the benefit of sick seamen. Then it began to make good, by appropriations from the national treasury, any deficiency in the tax so collected; also appropriations began to be made in the same way to build and equip marine hospitals. The medical service for the seamen was first organized, then reorganized; and from local political appointees its members became a corps of commissioned officers, whose head became the head of a bureau. Finally, the direct tax on seamen, long insufficient, was abolished altogether, and the great fabric of the Marine-Hospital Service was relieved from its dependence on irregular appropriations by the assignment to it of the proceeds of the tonnage tax as a regular fund.

And with this the government took the last step in the policy to which it had committed itself in the beginning, and, after a hundred years of steady progress toward that end, it assumed the entire expense and complete responsibility for the care and treatment of sick and disabled seamen under its flag.

In view of the fact that all this was brought about altogether without pressure or petition from the seamen themselves—rather against the will of some of them—and was due entirely to the active efforts of the general public, it is fair to assume that the present relations of the government to the seamen represents the settled policy not only of the government but of the nation.

All that has been said is fully borne out by the history of the Marine-Hospital Service and by the writings of various officers, among them Surgeon-General Woodworth and Surgeon-General Hamilton, and more recently by the historical sketch of Surgeon George W. Stoner, *Annual Report of the Marine-Hospital Service*, 1893, vol. i. And it is essential to understand thoroughly the obligations and responsibilities which the government has assumed, for then only are we in a position to indicate wherein it has failed to discharge those obligations.

It is the object of this paper to point out one signal instance of such failure, most complete and most disastrous in its results, and that is the utter lack of proper provision for the treatment of cases of pulmonary tuberculosis. This

is felt by every officer in the service, and the following extract from an article by Passed Assistant Surgeon J. O. Cobb (*Annual Report of the Marine-Hospital Service*, 1893, vol. i, p. 57) is no extravagant statement of the situation:

"The great number of tuberculous cases demands some prompt action by the government to relieve the hospitals as well as to move the patients to a locality favorable for their recovery. The general hospital is not the proper place to treat these patients even though there were room enough to isolate them. For climatic conditions also, the various hospitals situated in different parts of the country are not conducive to the comfort or eventual recovery of these cases. *As an actual fact, nearly all seamen with tuberculosis of the lungs die.* These cases are discouraging to treat even in an equable climate, but far more so when the climatic conditions are [more] unfavorable, and nearly every station in the service is unfavorably situated in this respect. To emphasize the fact of the great fatality of the disease more strongly, take the service statistics for an average year—say 1890—and we find that 756 cases of tubercle were treated, two recovered (the two recovered were *local* tuberculosis), 327 improved, and 113 died (twenty per cent.), 86 being on hand at the end of the fiscal year. That is a large percentage of deaths—too large; and these statistics are even then unreliable to this extent—many of the cases reported as 'improved' finally return or go elsewhere, and are recorded as new patients, while, in fact, they are old ones. The same case goes out 'improved,' tries to work, gets worse, goes into another hospital, is reported as a new case, possibly goes out again as 'improved,' and so on until he finally dies. This is the average history of the consumptive patient. I should say that, taking into consideration this fact, the percentage of deaths yearly is nearer thirty-five than twenty per cent. My experience has been that nearly all of these cases die in the hospital finally."

The writer then goes on to speak of the successful results attained in the Army and Navy Hospital for certain chronic diseases, and suggests that the Marine-Hospital Service should have two hospitals, one in the East and one in the West, for the segregation and treatment of tuberculous and other incurable chronic cases.

From the extract quoted above, and from the experience of every officer in the service, it is obvious that the present mode of treatment of consumptive patients of the service is a disastrous failure. It is no less obvious, from what has been said by way of introduction, that it is the duty of the government, through the service, to adopt any other method which experience has proved to be materially superior to that in vogue. And that the climatic treatment of tuberculosis is the proper treatment, the only established method of treatment that offers a reasonable hope of success, will be denied by no physician at this day. In favorable cases the percentage of cures in the best climates is very high; in our marine hospitals it is practically zero. There is no physician, no intelligent layman even, in the United States who does not know that there are thousands of healthy and useful men on the plains of Colorado, New Mexico, and Arizona, who went there, many of them, without the hope of recovery. There can be no manner of doubt, then, that it is the urgent duty of the government to provide a suitable camp, or camps, for its consumptive patients, and that these should be located in the most favored region of the country.

The exact location best suited for the purpose may be a matter for careful inquiry; but there can now be no doubt whatever that a serious mistake will be made if any other region should be selected than the arid mid-continental region of the United States. The day when "equability" of climate was considered a *sine qua non* is long since past. Likewise, the profession is beginning to recognize that the factor of *cold* as a tonic element in climate may be unduly insisted upon. The mass of the medical profession, it must be admitted, appear to be divided into two camps: the one, representing the most advanced opinions, contending for a high, dry, and cold climate; the other, and more conservative body, contending for a mild and equable climate. Both, however, agree that a cold and moist climate is the worst possible.

The agreement of all parties to the dispute on this last proposition is highly significant, and offers a key to the solution of the whole difficulty. It is that either cold or moisture in any excess is injurious, and that both parties, as usual, are partly wrong and partly right. In so far as they advocate elevation and dryness, the adherents of the high, dry, and cold theory are right; and the advocates of mild and equable (moist) climates are right in urging mildness. The most desirable region, therefore, is high, dry, and mild.

This deduction I believe to be fully warranted by facts, and sustained by a steadily increasing number of the most advanced men in the medical profession—and most disinterested perhaps.

When we come now to apply this deduction practically, we find that most of the generally advertised regions fail to come under the definition "high, dry, and mild." The South Atlantic States and California show a relative humidity of the air and a rainfall, one or both entirely too great. The Adirondacks and Colorado are subject to an intense cold, a harshness of climate, and a violence of weather changes at certain seasons which are certainly objectionable.

The only other part of the country where we may reasonably expect to find the desired conditions of climate is the southern end of the elevated, dry, mid-continental region —viz., in New Mexico, Arizona, western Texas, and southwestern Kansas. And here, if we may trust the reports of medical officers of the army posts, of the weather bureau, and certain equally disinterested reports of physicians who have had personal experience of many climates, all the conditions required are to be found.

Between Santa Fé on the north, and Tucson and El Paso on the south, the desired conditions of climate can be found for every consumptive who is not hopelessly affected, and for every month of the year.

Let us suppose that a site has been selected, somewhere in central New Mexico, for instance, where the elevation is five thousand feet. (Another station may be necessary at a lower elevation for such advanced or complicated cases as may not safely be sent to higher levels). To this sanitarium should be sent incipient cases and all cases not far

advanced and in which the patients are in fairly good condition. The sanitarium may very properly be modeled on the plan of the typical army post of this region, for it would be difficult to devise anything better; and the discipline and drill or other exercise may be largely military in character. The camp should be near a large town or a good market, and near enough to the mountains for those who need to camp out at higher levels for a few weeks in midsummer.

With a perfect control of such a number of cases through a term of years, some valuable progress ought to be made in the study of tuberculosis; and the value of the climatic treatment might be more accurately determined than it has hitherto been possible to do. Besides the large percentage of cures in young subjects and in incipient or otherwise favorable cases, an arrest of progress which, with care, will ultimately lead to the practical cure of "permanent quiescence" may be obtained in many others. These men can then be discharged and become self-supporting citizens of the country. The subject might be pursued further on this line, but this is not here necessary.

Heretofore we have considered this whole matter in its relation to only one of the functions of the Marine-Hospital Service—that of the care and treatment of sick and disabled seamen. But let us now consider it in relation to another and equally important function of that service—its duty of enforcing and administering the national quarantine laws and regulations, and preventing the spread of infectious diseases. We shall find that the arguments suggested from this point of view are scarcely less obvious or less conclusive than those already adduced.

The Marine-Hospital Service is the sole hygienic agent of the national government; and upon it devolves the duty (in so far as this may be a function of the general government) of enforcing the principles and practice of preventive medicine. It can not be denied that the duty has been well done—very well done, considering the nature and number of the difficulties to be overcome, the lack of funds at times, and the insufficient number of medical officers always. Emergencies have been met with energy and success, and various epidemics of cholera, yellow fever, and small-pox have been averted or suppressed. The surgeon general and individual officers have done service that was always effective, often brilliant, and sometimes heroic.

It must nevertheless be admitted that the energies of the service have been unduly absorbed in the combat with epidemic diseases. But for this the service can not fairly be blamed, for the imperious demands of a panic stricken public and of the government itself had to be met. It is high time, however, for the service to be accorded or to demand the leisure and the means to consider other hygienic problems of equal if not so menacing and spectacular importance; problems, moreover, which fall directly within the province of its prescribed duty. And of these the most important is the question of the limitation of the spread of tuberculosis, a disease with which, in the United States alone, three hundred thousand suffer every year and one hundred thousand die. This means that one in every two hundred of the sixty million people of this country is a recognized invalid from the disease. To what extent the disease is prevalent in the merchant marine may be judged by the extract already quoted, which states that seven hundred and fifty-six cases were treated by the service in 1890, or one in sixty-six of the fifty thousand patients of an average year. It is doubtful whether more than one hundred and fifty thousand seamen look to the service for medical assistance, and if this be true it would appear from the above that seven hundred and fifty cases existed among one hundred and fifty thousand men, about the proportion of cases (one to two hundred) which we have already found to exist in the country at large.* If this be true, or approximately true, it is not a condition of things that the officers of this service can view unmoved. They can not afford to exert anything less than the most strenuous efforts to bring about a radical change in a state of affairs under which it is possible for an army of men under their special charge, nearly all young and hardy, and engaged in a pursuit that should be singularly exempt from the disease, to show nevertheless a proportion of cases of consumption equal to or a half or a third the proportion among the general public of all ages and conditions. I have not at hand the series of annual reports of the Marine-Hospital Service, and these figures may not represent the annual average. If they are a hundred per cent. above it they are still too large; and certainly there are several hundred cases treated at the various stations of the service each year. Let us consider what this means.

It means that along the entire Atlantic and Gulf coasts of the United States, on the Pacific coast and along the Great Lakes, and throughout the Valley of the Mississippi, in every marine hospital in the country there are daily admitted foci of tubercular infection to which victims of influenza, convalescents from typhoid fever, and sufferers from every exhausting disease are exposed. It means that these tuberculous subjects either remain for months or years as sources of infection in the hospital wards until relieved by death, or that, temporarily improved, they go forth to spread infection in the streets of the town and in the generally foul and ill-ventilated boarding-houses where seamen herd together. It means that, if they ship again, as they usually do, they are crowded with other sailors in a narrow, damp, and dark forecastle, where the sunshine never penetrates, where cleanliness is rare and ventilation unknown, and where the conditions for the spread of infection are perfect. It means that the ranks of the tuberculous are thus recruited where it would be easiest to prevent the spread of the disease, where it ought to be prevented, and where the means of prevention are at hand.

Fishermen and men who ply their calling on the sea in open boats are notoriously exempt from tuberculosis and lung diseases generally. Merchant seamen are by no means so free from these troubles. Why is this? It is mainly because there is no forecastle in open boats where men live

* After the foregoing was in type the *Annual Report* of the service for 1894 was received. Of 52,804 patients, 923 had tuberculosis, indicating a decided increase in the number of cases and the spread of infection.

and sleep together packed like sardines, and where a single consumptive can make it dangerous for all the crew.

Let us suppose now that each consumptive seaman, as soon as recognized, is forbidden to ship again. He is sent, if a recent or favorable case, to the Marine-Hospital Sanitarium in the arid Rocky Mountain region; or, if an advanced and hopeless case, to the service sanitarium for such cases at San Antonio, for instance, where the elevation is slight, the climate mild, and the air comparatively dry. The vessel from which he is taken is immediately inspected by a medical officer, any other infected seamen removed, and the forecastle and other parts of the vessel probably infected are thoroughly disinfected. The master of the vessel is required to notify the Marine-Hospital authorities of any probable case of consumption that may at any time develop, and an act of Congress may make this mandatory under penalty prescribed. Laws in relation to scurvy already exist.

The result will be that our general hospitals will be free from introduced infection; that the sailors' boarding-houses will no longer be contaminated; that seamen will no longer be poisoned as they sleep in their bunks aboard ship. It is too much to expect that the measures advocated will bring about total extinction of tuberculosis among seamen, for they are exposed to slight risks in quarters that can not be reached, but the number of cases will be so greatly reduced as to add another to the list of conspicuous public services already performed by the Marine-Hospital corps.

Moreover, the results attained and the methods employed will be a valuable object lesson to the general public, and will add strength and definiteness to the movement, already so general and earnest, which has for its object the limitation or extinction of pulmonary tuberculosis. Finally, the service will have the satisfaction of discharging an obvious and urgent duty, which circumstances beyond its control have caused it to neglect and overlook too long, far too long.

To carry out the measures outlined in this paper an appropriation by Congress will be necessary. There should be no difficulty on that score. A simple and earnest statement of the case ought to carry enlightenment, and with it conviction, to the mind of every member. It is indeed difficult to believe that a government which has made and a nation which has approved liberal appropriations for the study and extermination of the diseases of cattle belonging to a class of people who advance no claim for help in their own ailments will refuse the comparatively insignificant sum asked by its chosen agent, the Marine-Hospital Service, to enable it to perform the double duty expressly enjoined upon it, of caring for diseased seamen and of preventing the spread of infectious diseases. And it is hardly possible that such an appropriation will be grudged, if members will reflect that it is intended for the relief of seamen, otherwise doomed to certain death, whom the government has cared for, and reiterated its intention to care for, during the last hundred years.

In conclusion, the writer may safely affirm that the need of some such sanitarium as that herein described is strongly felt by every officer in the service. And, although it is a somewhat delicate matter for an officer to speak for the head of his corps, yet he may venture to state what is generally understood—viz., that the necessity of this relief measure is felt by the present surgeon-general in a degree commensurate with his great responsibility; that he was the first to suggest and advocate the idea, which, most appropriately, he will at length be enabled to carry into effect, if, as is fully believed, the time is now ripe for doing so.

LUMBAR PUNCTURE OF THE SUBARACHNOID SPACE.

By GEORGE W. JACOBY, M. D.

(*Concluded from vol. lxii, page 818.*)

Diagnosis.—It is a great relief now to turn from the negative results obtained therapeutically by this method, and the theorizing concerning its possible advantages, to the actual findings attending its diagnostic employment. We may safely say that just as small as is the benefit derived therapeutically from the employment of lumbar puncture, so great is its diagnostic importance.

The interest attending the examination of the cerebro-spinal fluid in the manifold forms of cerebral disease must be very great, and, as Lichtheim says, for him who is convinced that a pure cerebral or a pure spinal meningitis rarely exists, that the free communication between the cerebro-spinal spaces, together with the natural current in the cerebro-spinal fluid, must result in a transportation of the inflammatory excitants from one organ to the other, and thus to a dissemination of the inflammation, such examination must inevitably lead to the adoption of Quincke's method for diagnostic purposes. So it happens, and this is due almost entirely to the efforts of Lichtheim, that the entire territory of spinal puncture has changed from a therapeutic to a diagnostic one, and whereas at the Congress for Internal Medicine held at Wiesbaden the diagnostic import was barely touched upon, at present it is this side of the question which dominates the entire subject.

Physiologically the cerebro-spinal fluid is a perfectly transparent, colorless liquid of faint alkaline reaction, free from histological elements, and of a specific gravity of 1·010 or less. Traces of albumin may be present, but even these are usually absent, and it often, in fact generally, contains a substance which, like dextrose, reduces Fehling's solution, but which has been shown (Michael Foster) to be not a sugar. The normal pressure of this fluid has already been given. As any deviation from this standard may be of diagnostic import, it will therefore be necessary in each case to pay attention to—

1. The pressure under which the fluid stands.
2. The presence and amount of albumin and sugar.
3. The presence of foreign substances in the fluid: (*a*) blood; (*b*) pus; (*c*) micro-organisms of various nature, particularly tubercle bacilli.

An increase of pressure may be demonstrated by actual measurement or by roughly gauging the amount of force with which the fluid leaves the canal.

For rough estimation it is sufficient to remember that normally the fluid comes out drop by drop, while in the large hydrocephalic exudates of brain tumor, for instance, it at first spurts out and then flows in a steady stream.

The specific gravity of the fluid is of very little practical value, as the amount usually obtained from each single puncture is so small as to preclude the possibility of making exact measurements.

The value which is to be laid upon the amount of albumin or sugar contained in the fluid is as yet not very great, although sufficient has been learned to make it probable that such examinations will be found to possess corroborative value.

Thus Quincke has already shown that the presence of one to two per cent. of albumin points to an increase of acute exudation—*i. e.*, to fresh inflammation. Lichtheim indorses this, and says that the transudation of brain tumors contains less albumin on the average than the exudation of brain abscess and meningitis. Since it is known that inflammation as well as stasis outside of the nervous system will increase the amount of albumin contained in the cerebro-spinal fluid, as evidenced by tests made in cases of nephritis, pneumonia, etc., and that therefore inflammatory or static conditions would from a diagnostic point of view obscure the results obtained, it is all the more important to have positive figures based upon the examinations of fluid derived from uncomplicated cases of cerebral disorder.

These figures Lichtheim has given us: In brain tumors albumin is found to be only slightly increased, 0·4 to 0·8 per cent.; in brain abscess about the same amount is found; while in tubercular meningitis the figures reached are one to 1·6 per cent.

The practical point gained from this examination is that, in the differential diagnosis between meningitis and brain tumor, everything having been duly considered, the presence of more than one per cent. of albumin in the fluid would be additional testimony in favor of the inflammatory condition.

I desire here to call attention to a fact which has, I think, not been sufficiently emphasized, and that is, that after repeated punctures the amount of albumin in the fluid increases several tenths *pro mille*. In my case of brain tumor, in which seven punctures were made, the amount of albumin was increased from a trace after the first puncture to one per cent. after the last one. This fact, which Hoppe-Seyler has already recognized after repeated punctures in spina bifida, if forgotten, is liable to lead to obscuration of any value which may be attached to the above measurements.

Sugar has been found by Lichtheim regularly in tumors, and exceptionally in tubercular meningitis. Fürbringer's results in this direction were negative, except in the cases of two diabetics suffering from tuberculosis. In the three cases of acute mania in which I advocated the puncture, 0·25 per cent. of sugar or some other reducing substance was found.

The coagulability of the fluid has also been shown to differ under various conditions. This coagulation, which occurs upon standing, takes place more easily in fluid derived from basal meningitis than in that from brain tumor; in fact, in the latter affection and in abscess either no coagulum at all is formed or merely a small deposit of leucocyte-poor flocculi takes place, while the fluid derived from inflammatory conditions forms a large coagulum, which traverses the entire amount of fluid and has numerous red and white blood-corpuscles entangled in its meshes.

Exceptions to these facts seem to be rare; only once did Lichtheim find them to be inapplicable, and this case itself showed such peculiarities (sarcomatous infiltration of the pia of the brain and cord, with inflammatory changes) that nothing else could have been expected. More important than the examinations of the kind thus fer spoken of are those for pus, blood, and micro-organisms.

To Lichtheim belongs the credit of first having directly proved the purulent character of three cases of meningitis, to have found streptococci in two cases, and in four out of six cases of tubercular meningitis to have demonstrated the presence of the tubercle bacillus by means of spinal puncture. Lichtheim's first diagnostic appreciation of lumbar puncture was in a case of chronic suppuration of the ear, with the development of cerebral symptoms. The differential diagnosis between meningitis and abscess was quickly and positively cleared up by the spinal evacuation of a few drops of streptococcus pus. The autopsy revealed a purulent cerebro-spinal meningitis starting from the ear.

Later he reported four such cases, as also one in which the diagnosis of a purulent meningitis, as well as of the nature of the ear affection, was made by the spinal puncture.

Since then single observations have accumulated, and every writer has been able to refer to one or more equally striking cases, the diagnosis having been either made or corroborated by means of the puncture. The purulent contents of the evacuated fluid have in different cases varied considerably, single drops of thick, creamy pus appearing, and the rest of the fluid being sero-purulent, or the fluid being only slightly clouded and containing numerous polynuclear leucocytes.

The advantages of the method are exemplified by the following case:

B. R., a man, aged forty years, seen in consultation, had suffered from ear disease (an otitis media) for years. A year ago had a mastoid operation performed upon one side. Since several weeks, pain and discharge from the ear on the opposite side. Since a few days has severe headaches and vomiting.

Examination, May 15th.—Ear filled with pus; no tenderness over the mastoid; no œdema. Patient complains of pain in the back of the neck and headache, which is general. His vomiting is frequent and cerebral in character. Pulse, 60; temperature, 103°. Is said to have had a chill to-day; rigidity of cervical muscles. Pupils contracted; photophobic.

16th.—Temperature in the morning, 101°. Chill during the day. Evening temperature, 103·5°.

The following days passed in about the same manner, with chills and varying temperature.

20th.—Ptosis of one eyelid. Temperature, 104°. Patient is delirious; respiration irregular.

The diagnosis of a probable brain abscess was now made,

but it was also believed that a meningitis existed. A lumbar puncture was then made, with the result of drawing off a syringeful of pure pus. In consequence of this, operative interference was discountenanced.

The following two days were passed in a stuporous condition, when convulsions set in, Cheyne-Stokes breathing became established, and on the 23d death took place.

The autopsy, which was confined to the brain, showed thick, creamy pus over the lateral surface of the brain and on the cerebellum. The pia covering the medulla, the pons, and the adjoining portions of the cerebellum were infiltrated with pus. The cerebellum contained a large abscess cavity. The fourth ventricle was full of pus, and the fluid in the lateral ventricles was excessive and puriform.

It has been asserted that the exudation in purulent meningitis shows certain differences according to the nature of the micro-organism causing it; this would make it not at all unreasonable to suppose that with a large statistical material as a basis we will be able to say that a meningitis due to such and such micro-organism will eventually run such and such a course or is more or less virulent than a meningitis due to some other organism. The presence of these various organisms may now be easily demonstrated *intra vitam* by means of spinal puncture and by subsequent staining or by cultures and inoculations. In the majority of cases streptococci have been found, in others pneumococci, and, in single instances, a short bacillus of great mobility very much resembling the bacillus of typhoid.

In a case of metastatic purulent meningitis which complicated an endocarditis ulcerosa tricuspidalis, Lichtheim evacuated a slightly purulently clouded fluid containing numerous chains of streptococci, each member of which was larger than the pneumococcus and appeared oval. Upon agar they grew as very small transparent colonies whose reinoculation was not possible. From the softened thrombi of the cardiac valves only *Staphylococcus aureus* could be raised.

Reasoning from analogy, it was hardly expected that tubercle bacilli would be found in the cerebro-spinal fluid obtained from cases of tubercular meningitis, for we know that in the sero-fibrinous exudation of tubercular pleurisy these bacilli are not found. Practical experience, however, here as in many other instances, teaches us more than any amount of theorizing, so that we find that in the majority—I am not prepared with Lichtheim to say in all instances—tubercle bacilli are found. The largest statistics upon this question are Fürbringer's, who, in thirty-seven cases of meningitis occurring in children and adults, was able to find tubercle bacilli in twenty-seven, or in about seventy-five per cent., so that the diagnosis, which in all of these cases was corroborated by post-mortem examination, had already *intra vitam* been assured by means of the spinal puncture. My seventeen cases of supposed tubercular meningitis are not available for statistical use, inasmuch as the majority of them were taken from dispensary and consulting practice, and autopsies in these cases were not obtainable: in eleven of the cases tubercle bacilli were found.

Considerable patience, time, and practice are necessary in order to find the bacilli in the cerebro-spinal fluid. The centrifuge was used in some cases and is undoubtedly of value, but I believe that we can do quite as well without its use. The best way is to allow the fluid, which is usually perfectly clear, as is the normal fluid, to stand in a funnel glass for twelve hours, and then gently lift out the weblike coagulum which has formed, place this upon the covering glass, tease it apart with needles, dry it, and treat the specimen in the usual way. It will be found that when tubercle bacilli are present they have become ensnared in this weblike coagulum. As a rule, the number found will be very scant, so that frequently a dozen specimens will have to be examined before a positive finding is reached. I am not prepared to say whether the negative result in cases of tubercular meningitis is not a sign of lack of care and patience; certain it is, that the more we grow accustomed to examine this fluid for these organisms, the easier and the more frequently do we find them.

A question which I wish to touch upon here is whether in the early stages of doubtful cases we can not by the puncture occasionally make a diagnosis of tubercular meningitis when from the clinical symptoms alone this diagnosis can not be made.

The following case not only proves that we are able to do this, but it also proves that tubercle bacilli are present in the cerebro-spinal fluid before grave cerebral symptoms become manifest:

The case was that of a child, six years of age, with a tuberculous family history, which at four years of age had passed through an attack of measles, and the following year an attack of pertussis, and since two weeks had been more or less generally indisposed; the child was languid, very irritable, took no interest in its toys, and vomited several times—as was supposed, in consequence of some dietetic error. It complained of frontal headache, had lost flesh, had a more or less rapid pulse, and its temperature was never less than 100° F., occasionally in the evening going up to 102°.

In the fluid derived from puncture, after several hours' search on the part of an expert microscopist, a very few isolated tubercle bacilli were found. As a result of this examination a diagnosis of tuberculous meningitis was made. The child continued in about the same condition, being now and then so bright as to appear almost well, but never with normal temperature, for another three weeks, when it became very much worse.

The headache increased; it vomited repeatedly; the pulse rose to 120 to 140; slight facial paralysis of the right side set in, as did also a semi-stuporous condition; every now and then convulsive movements of face and hands were noticed, and the child died after being in this state for five days, about six weeks after the onset of the general malaise. Any further puncture or an autopsy was not permitted.

The difficulty encountered in this case in finding the bacilli emphasizes the fact that no pain or efforts should be spared in carrying on these examinations, for while a positive result is a sure indication of the correctness of our diagnosis, a negative one does not prove its falsity.

It is the same here as it is in the bacteriological examination of the sputum, pleural and peritoneal exudations, and urine: in arriving at a diagnosis of the tuberculous disease of the corresponding organs only positive results are

of value. The value of such a corroborative method is inestimable, for, notwithstanding all that has been written upon the subject, the clinical diagnosis of tuberculous meningitis has until now been difficult in all but well-developed cases. In those cases which in their course and history deviate from the absolutely typical ones we have no single symptom, unless it is the presence of tubercles in the chorioid, and these are found only in a small percentage of cases, which will enable us to make a positive diagnosis.

In other forms of meningitis we may also be able to find micro-organisms which will clear up the nature of the inflammation; particularly does it seem probable that in cases of epidemic cerebro-spinal meningitis we should by means of the puncture gain an insight into the nature of the pathogenic microbe which produces this trouble, and thus add materially to our incomplete knowledge, of the causation of this inflammatory process.

The facts here adduced are of value not only from a scientific point of view, but directly and particularly when a question of differential diagnosis arises.

Thus the question which confronts us in many cases of cerebral abscess or sinus thrombosis, in which an operation is to be performed, is whether a meningitis is not also present. The presence of such a complication would, of course, influence our decision, and while we have many symptoms which will aid us in arriving at a diagnosis, we have none which is of so great value as a positive finding by means of a spinal puncture.

Or, placed before a case which may be either a purulent meningitis, a tubercular meningitis, or a brain abscess, we have here a positive guide to aid us in arriving at a decision.

Thus in a tubercular meningitis we would obtain a clear fluid containing tubercle bacilli; in purulent meningitis, a turbid or purulent fluid with staphylococci, streptococci, or pneumococci; in brain abscess, a clear fluid without micro-organisms of any kind. On the other hand, we must again lay stress upon the fact that only positive findings are to be implicitly confided in, for if a fluid is obtained which is clear and serous and contains no tubercle bacilli, we may nevertheless be dealing with a case of tubercular meningitis or even with one of purulent meningitis. If tubercle bacilli are present, it is certainly a case of tuberculous meningitis; if pus, one of purulent meningitis; but if, as stated, the fluid is clear and serous, and we find neither pus nor tubercle bacilli, it may nevertheless be one of those mentioned forms of meningitis, or it may be a tumor, an abscess, or a simple meningitis. This is acknowledged by all writers upon the subject, and has been particularly well emphasized by Stadelmann in a recent publication.

Lichtheim, in his article, reports a case which clinically seemed to be a purulent meningitis; puncture evacuated a turbid fluid, the turbidity being caused by small flocculi consisting of polynuclear leucocytes, without micro-organisms being found. This finding could easily lead an inexperienced observer astray and cause an operation for abscess to be undertaken, for in this case the autopsy revealed a purulent meningitis, unmistakable, but slight in extent. Lichtheim looks upon such cases as being of very rare occurrence, but Stadelmann reports two similar cases, in one of which the puncture fluid was absolutely clear in spite of the presence of an extended basal meningitis.

One more question, and an exceedingly important one, must finally be discussed; it is the significance of blood in the fluid derived from puncture. Blood thus obtained and not derived from the accidental puncture of a meningeal vessel may have been effused at or near the point of puncture, or it may have been poured out at a very much higher level and then have found its way into the lower lumbar region of the spinal canal.

The two clinical conditions which represent these possibilities are spinal meningeal and intraventricular hæmorrhage, in both of which lumbar puncture is a new aid to diagnosis whose value can not be overestimated.

The diagnosis of secondary ventricular hæmorrhage, based as it has thus far been upon the occurrence of a second apoplectic seizure or upon the deepening of the primary coma, with evidences of relaxation of muscles upon the opposite side to that originally affected, has been exceedingly unsatisfactory, while the diagnosis of primary ventricular hæmorrhage from hæmorrhage into the brain substance is hardly ever possible. Whether the hæmorrhage is primary or secondary, we know that in many cases all the ventricles become filled with blood, and that only in very few cases is the blood confined entirely to the lateral ventricles. After what has been stated about the free communication between the cavities of the brain and the subarachnoid space of the cord, it would therefore not be surprising if blood were found in the spinal sac in cases of ventricular hæmorrhage. This supposition has been confirmed by Quincke, and Fürbringer also has reported two cases, in the first of which there was the sudden occurrence of spastic hemiplegia with loss of consciousness and conjugate deviation of the eyes, and in which a post-mortem puncture of the spinal sac evacuated almost clear blood with only slightly altered blood-corpuscles, and the diagnosis of ventricular hæmorrhage was confirmed by the autopsy. In the second case puncture was made *intra vitam*, and a fluid rich in blood was obtained. On autopsy extravasation of blood into the cerebellum with rupture into the fourth ventricle was found. These cases therefore show that in perforation into the fourth, as well as into the lateral ventricles, blood may be found in the spinal sac.

While among my cases there was none which would corroborate these findings, one case is worthy of record in this connection, inasmuch as it shows the remarks already made about negative findings in tubercular meningitis to be similarly applicable to the class of cases now under consideration.

This case was that of a woman of immoral habits whom I had observed for years. She had a marked syphilitic history, and six years ago had had an attack of paresis of the right arm, with aphasia, both of which symptoms soon passed away. Two years ago she had another apoplectic seizure accompanied by left hemiplegia, which to a certain extent improved. In the morning of July 8th of this year

another attack of apoplexy set in. Unconsciousness; deviation of head and eyes to the right. Consciousness was regained and a complete left hemiplegia, with anæsthesia, was made out.

She complained of severe headaches, and vomited repeatedly; pulse was 84, temperature subnormal. The patellar tendon reflexes on both sides were exaggerated. In the afternoon she was perfectly conscious, talked, and swallowed food, but when left alone dropped off into a somnolent condition. During the night this somnolence gave way to a semi-stupor, so that she could be aroused only with difficulty. The following morning when I saw her she was completely comatose; pulse, 120; temperature, 102°; respiration, 36. A diagnosis of probable rupture into the ventricles was made, and a lumbar puncture carried out for the purpose of corroborating the diagnosis, with the unexpected result of obtaining only about twenty cubic centimetres of clear cerebro-spinal fluid. Death occurred that afternoon, and the autopsy—at which I was not present—made the following day, showed generalized endarteritis and a large hæmorrhagic focus on the right side between the external capsule and the lenticular nucleus, which had forced its way through the latter and the internal capsule, and had ruptured into the ventricle by passing between the caudate nucleus and the thalamus. The right lateral ventricle was completely filled with blood and the left one partially so. There was also some blood in the third and fourth ventricles.

The puncture, therefore, with its evacuation of clear fluid, not only did not cast any light upon the actual state of affairs, but could, if we had been dealing with a traumatic case, have led us astray. But granting that our finding is a positive one, are we, in all cerebral cases in which blood is drawn through the puncture, justified in diagnosticating them as ventricular hæmorrhage? Certainly not, and for the following reasons:

First, a small quantity of blood, sufficient only to give the fluid a sanguinolent appearance, must be viewed with great caution, and does not admit of any deductions, inasmuch as in perfectly normal cases injury of the bone during the puncture will produce this result. Secondly, we should never forget that blood may be drawn by puncture of a vessel in the cauda, so that if any doubt as to the possibility of this occurrence exists, a second puncture should be made, when, if blood is again obtained, its spinal vascular origin may be excluded. Thirdly, we must concede that in subdural hæmorrhage a passage of blood from the cerebral into the spinal membranes might take place. In this case, however, it could only be a transudation of blood, and our puncture fluid would be a bloody serum instead of the almost pure blood which we would obtain if we were dealing with a ventricular hæmorrhage. These objections having been duly weighed, this question is, from a surgical point of view, of some import; for if by means of the spinal puncture pure blood is obtained, it is in traumatic cases an indication that a widespread laceration has taken place, or in non-traumatic cases, which are brought into the hospital without further history, evidence of an intracerebral hæmorrhage with intraventricular rupture, and shows that surgical interference is contraindicated.

To the question of lumbar puncture in hæmorrhage within the spinal canal, so far as I am aware, no attention has been given.* Of my cases two were of such a nature as to emphasize the importance of this procedure in this condition.

Case I.—A woman, twenty-two years of age, in June, 1895, slipped from the upper step of a front stoop and slid from top to bottom in a semi-sitting position, striking with the lower part of the spinal column upon the sidewalk. She was somewhat dazed from the fall, attempted to rise, but, experiencing intense pain in the back about the mid lumbar region and tearing pains in the lower extremities, she remained lying where she was. Then, assisted to her feet by passers-by, she is sure that she could stand, and thinks she walked to the carriage in which she was placed and driven to her home, about twenty blocks distant. During this ride she noticed that her legs felt numb and heavy, so when she arrived she was unable to move them, and had to be carried into the house.

I saw her with her physician about six hours after the injury. She had paralysis of both legs, less marked upon the right side. There was a large, bruised tender spot in the lumbar region, but no evidence of either fracture or dislocation.

A careful examination showed that all power of motion, except that of adduction and flexion of the thigh, was lost in the left lower extremity, while upon the right side some extension of the knee and abduction of the thigh were also possible. Urine could not be voluntarily passed, and the superficial reflexes (plantar) and knee-jerks were absent. There was anæsthesia of both legs from the hips downward, including the perinæum and labia. The skin over the hips and upper third of the anterior aspect of the thigh was not so anæsthetic as that lower down. A diagnosis of spinal hæmorrhage, with or without fracture, was made, and, on account of the history of pains followed by paralysis, I believed it to be intrameningeal, probably subdural or subarachnoid, and not intraspinal. At my suggestion a puncture was made between the fourth and fifth lumbar vertebræ, and about fifteen cubic centimetres of almost pure dark blood were drawn off. Thirty minutes after the puncture the anæsthesia had disappeared entirely from those parts which had previously been partially anæsthetic, but motion was no greater than before. The following day in the afternoon she had fairly good control over all the muscles of both thighs; otherwise her condition was the same. She improved from day to day, regaining control of her bladder on the third day, and in two weeks after the accident was nearly well. She then showed what has remained since, weakness in the peronei and extensors of the ankles and absent knee-jerks.

Case II is that of a young college student who met with a bicycle accident and was violently thrown against a stone fence. He was not unconscious, was able to move his legs, and tried to get up, but could not.

* Kiliani has very recently reported a case of puncture of an intradural hæmatoma of the cord, in which the area of anæsthesia extended upward to the level of the third lumbar vertebra and complete paralysis of the lower extremities, bladder, and rectum existed. During five days there was no change in this condition; on the fifth day a puncture was made and eight cubic centimetres of thickish tar-colored blood were removed. An hour after operation the skin over certain territories had partially regained its sensibility. After four more days had passed without change of any kind, the patient unexpectedly died. Only a partial autopsy was made, which, however, demonstrated the existence of a subdural hæmatoma, and showed by the puncture mark that the needle had entered the subdural sac between the third and fourth lumbar vertebræ.

He complained of pains in the back and upper gluteal region. I saw him at his home the day after the accident. He then complained of the same pains, of cramps and weakness in both legs, and of inability to retain urine or fæces. Examination showed a pronounced ecchymosis over the upper lumbar region, which was painful to pressure. Evidences of fracture or dislocation were not present. Both legs were weak, but not paralyzed. Thus, while he was not able to stand, he could in the horizontal position perform all movements except extension of the feet and toes.

Sensibility also was not lost, but there was marked reduction to touch from the crest of the ilium downward, about the same upon both sides.

Under an anæsthetic, puncture was made between the third and fourth lumbar vertebræ, and about twenty cubic centimetres of dark fluid blood were withdrawn. For four days his condition remained unchanged, and he had slight rise in temperature. A week after the accident he had regained control of bladder and rectum, the disordered sensibility was much improved, and he was able to stand with support. After four weeks there was complete restoration, except for an area of partial numbness involving the perinæum, scrotum, penis, and a small, irregular area on the back of the thighs; flexion and extension of the toes were also slightly impaired, and both cremaster and plantar reflexes were still absent. His knee-jerks had never been lost.

In both of these cases we had symptoms pointing to lesion in the lumbar and caudal region, and whereas they both made good and rapid recoveries, it would be manifestly incorrect to attribute this recovery to the puncture as such, for we well know that some cases of caudal lesions are of the greatest possible seriousness; others, even if in the beginning they present a grave aspect, recover either partially or completely without any operative interference and in a comparatively short period of time.

But, on the other hand, we must at least concede that the removal of the blood must have reduced the local pressure, as well as have left less blood in the spinal canal for Nature to absorb, and thus placed the patients in a position more favorable to recovery than they were before the puncture.

The fact that in both of these cases the symptoms which still remained were such as were dependent upon injury to the lowest nerve roots might also be accepted as an argument that pressure upon the nerve roots was relieved by the removal of blood in that locality, while the accumulated blood over the lower roots could not be reached. In hæmorrhage in the spinal canal, whether supradural, subdural, or subarachnoid, immaterial at what part it has occurred, the blood will generally descend to the lower lumbar or sacral region. The space around the cauda in the lumbar region is comparatively large, while the sacral canal is much narrower, so that we must assume that a great part of the blood will accumulate in this lumbar space. If we bear this fact in mind, it must become evident that in spinal injury of whatsoever nature, whether or not attended by fracture, a puncture in the lumbar region, with the removal of as much blood as may there be found, must increase the patient's chances of complete recovery in direct ratio to the amount of blood removed. If, furthermore, the symptoms pointing to location and nature of the lesion warrant us in diagnosticating a hæmorrhage in the cauda, it is our duty to puncture at once, as the objections which would lead us to hesitate before trephining are here absent; the sooner we puncture, the more chances have we of preventing permanent disorder. Also, from a purely diagnostic point of view, in all spinal injuries the procedure must be a valuable one, and it seems to me probable that, if sought for, hæmorrhage from the posterior spinal veins (supradural hæmorrhage) or from the pial vessels (subarachnoid hæmorrhage) will be found to be present more frequently than has hitherto been supposed.

Finally, I will say that I have advocated the puncture in three cases of acute mania, one of which has already been referred to by Dr. A. Caillé in this *Journal*. The fluid evacuated from these three patients was found to be entirely sterile; from two of them a larger amount of fluid was obtained than from any of my other cases—ninety and one hundred cubic centimetres respectively. The puncture exerted no influence whatsoever, not even of a temporary character.

As a result, therefore, of my experience and that of others, we may summarize the acquired facts as follows: By means of lumbar puncture, cerebro-spinal fluid can be easily removed from the subarachnoid sac of the spinal cord and from the cavities of the brain.

Therapeutically, it is only of direct value as a palliative through the reduction of increased pressure; it may, perhaps, prove of more service indirectly as the first step to local treatment of the cord and brain.

Diagnostically, it possesses great clinical advantages in the diagnosis of the various inflammatory affections of the cerebral membranes and in the recognition of intraventricular hæmorrhage as well as of hæmorrhage within the spinal canal.

From the facility with which this little operation can be carried out it should not be long before lumbar puncture will form part of the routine work of every practising physician.

Literature.

Browning, William. *Transactions of the American Neurological Association*, 1894, p. 102.

Caillé, A. *New York Medical Journal*, June 15, 1895.

Dennig. *Münchener med. Wochenschrift*, 1894, p. 983.

Discussion. *Verhandlungen des XII. Congresses für innere Medicin*, pp. 197–205.

Discussion. *Berliner klinische Wochenschrift*, 1895, p. 287.

Freyhan. *Deutsche medicinische Wochenschrift*, 1894, p. 707.

Fürbringer. *Berliner klinische Wochenschrift*, 1895, p. 272.

Heubner. *Berliner klinische Wochenschrift*, 1895, p. 289.

Kiliani, O. G. T. *New Yorker medicinische Monatsschrift*, 1891, pp. 929–964.

Lichtheim, Professor. *Deutsche medicinische Wochenschrift*, 1893, pp. 1186–1234.

Lichtheim, Professor. *Berliner klinische Wochenschrift*, 1895, p. 269.

Morton, Charles A. *British Medical Journal*, 1891, ii, p. 840.

Morton, Charles A. *British Medical Journal*, 1893, i, p. 741.

Ord, W. W., and Waterhouse, H. F. *Lancet*, 1894, i, p. 597.
Paget, Stephen. *Lancet*, 1893, ii, p. 873.
Paget, Stephen. *Lancet*, 1894, i, p. 931.
Quincke. *Arch. für Anat. und Physiologie*, 1872, pp. 153, 177.
Quincke. *Verhandlungen des X. Congresses für innere Medicin*, p. 338.
Quincke. *Berliner klinische Wochenschrift*, 1891, pp. 929–964.
Quincke. Volkmann's *Sammlung klinischer Vorträge*, N. F., 1893, No. 67.
Stadelmann, E. *Berliner klinische Wochenschrift*, 1895, p. 581.
Von Ziemssen. *Verhandlungen des XII. Congresses für innere Medicin*, p. 197.

THE TECHNICS OF THE BURIED TENDON SUTURE.*

By HENRY O. MARCY, M. D.,
BOSTON.

The constant receipt of letters from all parts of the country, containing inquiries concerning the method for the safe use of the buried animal suture, prompts the writing of this brief contribution. At the risk of seeming dogmatism, I venture to assert that aseptic wounds, with very few exceptions, should be primarily closed by buried tendon sutures and hermetically sealed with iodoform collodion.

To accomplish this the surgeon must be master of the technics of aseptic surgery. Without it the buried animal suture should never be used. Under aseptic conditions this suture may be safely applied with the assurance that the collodion seal is a guarantee of subsequent non-infection. Other suture material may be employed—as, for example, silk, silkworm gut, silver wire, etc.—with the certitude that it is non-infective when properly applied, and that it will maintain the structures in coaptation for an indefinite period.

I need, however, only refer to the general consensus of opinion that these materials are objectionable because of their non-absorbability, and that too often such sutures become a source of subsequent irritation and discomfort, not seldom being eliminated as foreign bodies. To avoid these results the animal suture has received wide adoption. This was found ready at hand, seemingly well adapted to the purpose, in the catgut of commerce. Smooth, even, strong, in varying sizes, what could be more satisfactory? It was soon discovered, however, that it was difficult of sterilization, and, as usually prepared, did not remain sufficiently long intact in the structures. Hence has arisen a great variety of methods of preparation. The defect, however, is inherent in the structure itself.

It must be remembered that catgut is the connective-tissue sheath of the small intestine of the sheep. In order to separate it from the other intestinal coats, the intestine must be subjected for a considerable period to the decomposing processes of putrefaction. This is accomplished by the bacterial growths which develop in its maceration, attacking the connective-tissue sheath last as the most resistant. When this process is held in abeyance, and the fibrous coat of the intestine has been cleansed, it is found to consist of a thin layer of connective-tissue bundles which interlace obliquely in order to permit the physiological foreshortening and expansion of the intestine. The cement substance which holds the cells together has been more or less injured by the process of maceration, and the entire structure is everywhere replete with bacterial growths.

Longitudinal division leaves flat bands of this tissue which are twisted into strings of varying thickness, the catgut of commerce. When dry, this is very strong and tolerably inelastic; but when wet, as for example, when buried in the tissues of the body, it speedily becomes a soft, flattened band of elastic structure, a condition which easily explains the unsatisfactory use of catgut in surgery, almost regardless of the processes of preparation to which it has been subjected.

In the tendons of animals the connective-tissue cells are disposed in an entirely different manner and for quite another physiological purpose in the animal economy. Here the fibrils are placed in parallel bundles, held together by the cement substance for almost the sole purpose of strength. When they are of any considerable size, a few lateral fibres are interspersed for the purpose of holding the bundles together in a single mass. It is on this account that a tendon is weakened by subdivision, and when it is too minutely divided it may become worthless for the purposes of strength because of the fraying out of these lateral fibres. Tendons subjected to maceration like catgut become speedily damaged, because of the softening of the cement substance which holds together the connective-tissue cells, and under these conditions, like catgut, the tendon is easily ruined.

Carefully selected tendons are to be preferred for buried sutures, since primarily their anatomical construction makes them stronger, more compact, and, as a consequence, more resistant to the softening processes which must ensue when buried in the living structures.

Secondly, when properly preserved, they have never been subjected to bacterial decomposition, and hence they can be sterilized without detriment to their ultimate elements. Such tendons serve a very good purpose as sutures when taken directly from the freshly killed animal. This, however, is very rarely convenient, and therefore some process of preservation must be resorted to. If they are quickly sun-dried and kept dry they can be preserved for a long period, since bacteria can not develop without moisture. This has been the custom indefinitely among the Indians in the preservation of their tendon suture material, which has been the thread of the savage since the beginning of history.

Although many surgeons use them preserved in a dry state, and when ready for application soaked until supple in some antiseptic, the sutures, even if aseptic, soften too quickly in the tissues.

Time does not permit a review of the various processes which have been recommended for the preservation and preparation of the animal suture. Perhaps the more

* Read before the Southern Surgical and Gynæcological Association at its eighth annual meeting.

common method has been to preserve it in alcohol alone or combined with other substances. When subjected to dry heat, to boiling repeatedly in alcohol, or under pressure, the connective-tissue structures are rendered sterile, but they are seriously damaged in their inherent composition, both in the connective-tissue cells and in the cement substance which holds them together.

Profiting by the experience of the ages in the manufacturing of skins into leather, astringents in combination with oils have been experimented with, and in many ways most satisfactorily. This is largely the advantage obtained in the use of chromic acid, which, by a kind of hardening process, tans the tendon—that is, fixes the cement substance, holding the cells in more permanent apposition, and renders it far more resistant to the macerating effects of fluids. Hence, chromicized catgut or tendon undergoes change much more slowly when buried in the living tissues.

The difference in structure of the two substances already referred to is easily shown by the simple immersion of catgut and tendon, similarly prepared, for half an hour in a warm fluid—as, for example, in a 1-to-1,000 solution of bichloride of mercury. The catgut becomes swollen, slippery, can be threaded with difficulty, and when tied the knot holds very imperfectly. On the contrary, the tendon is supple, firm, inelastic, does not kink, and is manipulated with an ease and satisfaction unknown to one who has used only silk or catgut. When tendon has been chromicized it is best preserved in a sterilized oily fluid. Experience has shown that by far the best preserving fluid is linseed oil sterilized by heat, to which carbolic acid has been added. Tendon improves with age, so much so indeed that I rarely use it until it has been thus kept in the oil from three to six months.

A method far too common has been to preserve chromicized catgut and tendon in absolute alcohol, boiled under pressure. There is no question but that such material is absolutely sterile, but the important factor has been singularly overlooked that by this process the chromic acid is dissolved out of the tendon, thereby leaving it really less valuable than if chromic acid had not been used.

There remains the vital question to be answered, How may the surgeon be assured that the tendon suture in itself is not a source of infection? Primarily, that it has been taken from a freshly killed animal, that the said tendon has been quickly sun-dried, and kept dry until ready for preparation. This consists, first, in soaking the tendon in a solution of 1-to-1,000 bichloride of mercury until supple. Then, carefully separate each tendon individually and dry separately between sterilized towels. They are then assorted into small bundles and chromicized with the greatest care in a 1-to-20 watery solution of carbolic acid to which has been added one four-thousandth part of purified chromic acid. This will prepare tendon of equal weight with the crystals of carbolic acid, but the tendon must be immersed in the solution immediately upon the preparation of the fluid, since otherwise in a short period the chromic acid is thrown down as a sedimentary deposit. The process of chromicization goes on more or less rapidly, dependent upon heat, exposure to sunlight, the quantity of material manipulated, and requires careful watching, since, if too rapidly effected, or permitted to remain too long in the solution, the tendon may be easily ruined. When properly chromicized the tendon should be of a dark golden color. When taken from the chromicizing fluid the tendon is best dried in the sunshine between sterilized towels, and should be immediately put up in carbolic oil, the whole process carefully conducted under aseptic conditions, the bottles securely corked and sealed. When wanted for use the tendon is carefully taken from the bottle, soaked in a mercuric solution until supple, and then arranged in parallel strands, wrapped in a folded towel saturated with a 1-to 1,000 mercuric solution, the ends of the tendons exposed so that they may be withdrawn one at a time as selected. If more convenient they can remain immersed in a dish of bichloride solution during the operation and selected therefrom as required. The amount of the bichloride contained in the suture does no harm to the structures in which it is buried. I have often thought it an advantage rather than otherwise.

A brief reference to the history of the buried suture may be interesting. It is known that the Greeks and Romans used the strings of their musical instruments for various purposes in surgery. The first reference which I find to the use of the animal ligature was by Dr. Physick, of Philadelphia, who in 1806 suggested that such material should be of value. Dr. Physick first published upon the subject in 1816. He recommended the ligature to be made of chamois or buckskin, variously prepared. For a considerable period his method seems to have been widely adopted. Dr. McDowell tied the pedicle in his first ovariotomy with buckskin, returning the same to the abdominal cavity, and closed the wound without drainage.

The best article which we have extant of this period is a prize essay, written by Dr. Jameson, of Baltimore, bearing the date of 1827. He made numerous experiments upon the lower animals, and recorded his observations with a care and skill worthy of any scientist. For a considerable time animal ligatures were used in London by Sir Astley Cooper and others; but in the subsequent period of heated debate upon the so-called processes of inflammation supervening in wounds this most valuable experience was lost to science and forgotten until repeated in our own time by Mr. Lister. His experimental studies are in large measure a repetition of those of Dr. Jameson, but occurred in a more fruitful age, the knowledge of the bacterial infection of wounds reducing to known terms the mysteries of the inflammatory processes so long discussed by the surgical masters.

In 1870 it first occurred to me that the separated structures in healthy wounds might be advantageously joined by coaptating the same with ligatures precisely as I had seen Mr. Lister ligate arteries. I used interrupted catgut sutures cut short and left deeply buried in the wound. I soon found it more convenient to use a continuous suture. After a time I ascertained the defects of catgut, and in 1880 I first published my experience in the use of tendons from various animals, that from the hind leg of the moose proving perhaps the best. After a long search for better ma-

terial, judging from the anatomical structure of the tail of the squirrel and opossum, I sought for the tendons from the tail of the kangaroo, and received my first invoice in 1882. The superiority of these is found in that the psoas muscles subdivide in numerous fasciculi, each of which has its own separate tendon. These continue in separate parallel strands, like a skein of threads, to their attachment to the very end of the tail. The anatomical picture is found in the tail of the rat and of the squirrel. These are, however, too short and fine for general use. On the contrary, the tendons from the tail of the large kangaroo (*Macropus giganteus*) are many times too large, and when subdivided are liable to split flat and fray. Only recently has my attention been called to tendon of this character which is being sold for suture material. The smaller varieties, called by the natives the *wallaby*, furnish excellent tendons in variable sizes without subdivision, and are the ones to be preferred.

The aseptic suture, buried in wounds which have been made and maintained aseptic, approaches nearer to the ideal than any other material yet in use. By it all wounds in healthy tissues, no matter how large, even the major amputations, should be closed securely, like structures joined without recesses or pockets, thus doing away with drainage in any form. This prevents the need of expensive absorbent antiseptic dressings and permits of a germ-proof seal of iodoform collodion. Subsequent infection is *then* impossible.

The method of the application of the suture is of some importance. It should be continuous, since less material is required in the wound, knots are avoided, and the tension upon the structures is equalized. This last is very important. Coaptation, retention, and rest are the factors. Undue constriction of the tissues devitalizes the parts and is to be carefully guarded against. If much strain is likely to ensue upon the coaptated parts, I usually use the double continuous suture, which I commended to the profession many years since, applying it by means of a needle with eye near the point, so that the suture passes in opposite directions through one opening or puncture in the same manner that the shoemaker carries his bristled thread. It is, however, important to remember we are only to *coaptate* and *not* to *constrict* the structures by such powerful measures. The Hagedorn full-curved needle is very convenient, since it serves as both needle and handle, and can consequently be best used without a needle holder.

The end of the suture fastened by a slip knot, the needle is deeply buried in the structures to be coaptated, from side to side, each stitch entering directly opposite the emergence of the preceding stitch; when the suture is drawn upon, the tendon crosses the wound at right angles and leaves its lips in secure coaptation, with *no foreign substance* intervening. This is impossible in the application of the buried interrupted suture. The skin is closed by a fine tendon suture, taken in a similar way, puncturing only the deeper layer (subcuticular suture). This I devised and have used it almost daily for the last ten years, designed to avoid stitch abscesses, long before it was known that our most dangerous enemy was a micrococcus ever present in the dying epithelium of the skin.

The larger vessels are better ligatured with fine tendon, not too tightly, however, always remembering simple constriction to prevent bleeding is sought, not necrosis of the inclosed vessel. A wound thus coaptated does not bleed. The serous exudate is at once followed by cell proliferation, and the repair processes supervene with a rapidity understood only by those familiar with the histology of aseptic wounds placed at rest. The suture thus buried in healthy tissues is first surrounded by leucocytes, then slowly invaded by them. Little by little these are changed into connective-tissue corpuscles, and the tendon is finally replaced by a living band of connective tissue, a re-enforcement of vital importance in many wounds—*e. g.*, hernia, laparotomy, suturing of tendons, muscles, etc. The iodoform collodion seal has many advantages. If the structures below have been aseptically joined there is no subsequent possible infection. It holds the cutaneous surfaces in fixation, retention, and at rest. The repair processes which ensue beneath the seal are so minimized that the scar is in large measure avoided; a result in itself comparatively a minor matter, not to be overlooked, since a tender cicatrix is a source of discomfort and generally unsightly. The subsequent bandaging is also minimized, often omitted altogether. In this there is a manifest gain in comfort to the patient, saving of expense in material and care, and, most of all, the doing away with the still too common custom of making pressure upon the wounded structures for the purpose of securing coaptation and controlling the escape of blood and serous exudation. Compressed tissues are more or less deprived of the free circulation of the blood upon which their nutrition depends and without which repair is impossible.

The coaptation of sundered aseptic structures by the use of the buried aseptic tendon sutures, and their fixation, retention, and rest under an aseptic seal without compression, is the corollary to antiseptic surgery, and should be adopted by every competent operator.

In the long series of my experimental studies upon animals in which, under varying conditions, sutures have been buried, I was at first led to believe that the connective-tissue cells of the buried material were, in a measure, revivified, as in a graft, so accurately did the living band of connective tissue replace the implanted suture. More careful studies, however, show that the foreign material is at first incapsuled by cell proliferation which, little by little, invades it, causing its disappearance precisely in the same way as necrotic tissue disappears after injury, where the surrounding parts are maintained aseptic.

I here call your attention to microscopic slides showing sections of the tissue surrounding buried tendon sutures at varying periods after their implantation. It will be noted that the thicker portions of the tendon are distinctly traced, even at the lapse of a year or more, centrally imbedded in a firm stroma of healthy connective tissue.

Elsewhere I have published at length the clinical reports giving statistical results.

In over two hundred laparotomies, where the abdominal wound has been closed with buried tendon sutures applied in separate layers, but two cases of subsequent

hernia have been noted: one the result of infective sloughing, the other after the removal of a large fibroid tumor, where, rather than a hernia proper, the whole abdominal wall was left relaxed and bulging.

In over three hundred cases of operation for radical cure of hernia, where by means of buried tendon sutures the posterior wall of the inguinal canal has been re-enforced and strengthened and its obliquity restored, more than ninety per cent. have remained permanently cured.

The infection of wounds may never be absolutely prevented, but the experience of surgeons teaches us daily to what a marvelous extent it can be minimized, reduced in aseptic wounds, I confidently believe, even in hospital practice, to less than five per cent. Indeed, not long ago I examined my own personal experience, reviewing six hundred operations upon aseptic structures with only two per cent. of septic cases—evidence, I think, ample to show the safety of the coaptation of wounds by the buried animal suture. I am confident that at an early period the use of the buried tendon suture in aseptic wounds will become indispensable in operative surgery.

180 Commonwealth Avenue.

A LIMITED EXPERIENCE WITH THE PAUL PAQUIN ANTITUBERCLE SERUM.

By L. L. SHROPSHIRE, M. D.,
San Antonio, Texas.

At the earnest solicitation of the husband of a patient who is in the last stages of pulmonary phthisis (upper lobes of both lungs destroyed), I began the use of the Paul Paquin antitubercle serum with her about July 1st last. I used it under protest, for I had already advised her husband to take her to her home in Alabama, where she could spend the last few weeks of her miserable existence among friends with home comforts, for I was sure she had but a short time to live. Greatly to my surprise, after using the treatment a few weeks she manifested marked signs of improvement. Night sweats disappeared, rigors ceased, and the temperature was much lower, at times normal for many hours. The treatment was continued two months, when circumstances took her beyond my reach, but I understand she is still living, with prospects of holding on for some time. She certainly would have died ere this had the serum treatment not benefited her so materially. As before stated, I administered the treatment under protest, realizing it was absolutely impossible for anything to afford her any permanent relief; but, while trying the experiment with her, I decided to try other cases which would do more justice to the treatment. And let me say here that one does injustice to the patient, to the treatment, and to himself if he ceases the treatment and condemns it because the patient does not begin to improve at once, for my experience teaches me that some patients show no signs of improvement under eight or ten weeks, while others improve very rapidly.

Case II.—C. E. W., of Illinois, aged twenty-five years, appeared July 16th with the following history: In June, 1894, he was taken with cough and hæmorrhages from the left lung, followed by fever, purulent expectoration, loss of weight, and general declining health. He was sent to this city in September following, to try the benefits of this wonderful climate. The climate was all that he could expect, and his health improved very materially, fever and hæmorrhages ceased, and he regained some of his lost weight. In May of this year he accepted a position as brakeman on a railroad running two hundred miles east into a malarial district, when he soon began to lose all he had gained, and all the former symptoms returned with increased vigor. The physical examination revealed dullness over the upper lobe of the left lung, moist râles and gurgling sound of a large cavity, violent cough, and temperature 103° F. He stated that he had night sweats every night, could retain no food, and was losing flesh rapidly, weighing at the time one hundred and thirty-five pounds. Microscopical examination of the sputum showed a large number of bacilli. I began by injecting ten minims, and increasing five minims daily until the dose reached twenty-five minims. In two or three weeks the temperature and night sweats grew less, appetite returned, and digestion improved. From this time his improvement has been uninterrupted, until now, four months from beginning the treatment, he is practically a well man, and for the past month has been braking on a freight train, still increasing in weight and strength. Repeated examination of the sputum revealed fewer bacilli each time, until at the last examination, three weeks ago, but one single rod could be found out of four slides mounted. He now weighs one hundred and fifty-eight pounds, which is three pounds greater than the maximum weight of his life. I am continuing the treatment at such intervals as he is able to present himself, and expect at the next microscopical examination to find that the bacilli have entirely disappeared.

Case III.—C. A., aged fifty-one years, shoemaker, has lived in this city many years and contracted the disease here. He had *la grippe* a year ago and has never been well since. Physical signs revealed nothing but a chronic bronchitis, which without the microscope could not have been pronounced tuberculous. While this patient was in the early stages of the disease he had begun to decline very rapidly.

He had no night sweats, and but slight fever every day, but he had no appetite and was losing flesh rapidly, weighing at the time one hundred and thirty-one pounds. He has now, after four months' treatment, returned to his work, having gained eighteen pounds, being one pound heavier than ever before, and the last examination of the sputum showed only three rods out of four slides mounted.

Case IV.—Miss H., aged twenty years. Large cavity in left apex, high fever, excessive cough, and all prominent evidences of a rapid decline. No fever after four weeks' treatment, appetite ravenous, and has gained nine pounds in ten weeks' treatment.

Case V.—T. E. M., aged thirty-three years. Disease of six months' duration. Both apices involved; night sweats, rigors, and high fever; no appetite, poor digestion, and losing weight rapidly. After six weeks' treatment has gained twelve pounds; night sweats, rigors, and fever ceased; appetite and digestion good; and he is the happiest man in the world, so he says.

Of twenty-five patients treated up to the present time, all have improved, some very materially and others not so much. One patient remarked that he had been from Maine to Mexico, tried all the climates and many doctors and medicines, but this is the first thing that ever made him

feel one whit better, and he intends to stick to it as long as it makes him feel well, whether it cures him or not. With the present light before us, who could refuse to try this treatment if it offers one ray of hope to the poor consumptive? What before has ever benefited those patients except climatological influences? With a lifelong experience in this wonderful climate of southwestern Texas (which I believe is the best on earth), my efforts to relieve these patients have been signal failures so far as any medicinal remedies are concerned, and for the past few years I have refused to treat them, because I was compelled to acknowledge my inability to cope with this dreadful malady.

With the success reported by Dr. Paquin, Dr. Lemon, Dr. Tuholsky, and Dr. Simpson, of St. Louis, and many other prominent men throughout the country, in damp, cold, and unfavorable climates, why should we not expect better results from the serum treatment in a climate such as we have in southwestern Texas.

San Antonio is situated near the centre of what is called the dry belt of Texas. Her climate, although almost unknown to the outside world, is far superior to that of the much-advertised health resorts of the United States. With an altitude of six hundred and fifty feet above the sea level, an annual precipitation of 31·32 inches, a relative humidity of sixty-eight degrees, and a mean annual temperature of 65°, with a yearly relative humidity of sixty-one per cent., she is the health-seeker's Mecca.

Many of the most prosperous business men of this little city of 60,000 inhabitants are men who came here ten, fifteen, or twenty years ago, suffering with phthisis in its various stages, and are now living monuments of the great curative properties of this wonderful climate. A large sanitarium here, in conjunction with the Paquin treatment for tuberculosis, would be a blessing to suffering humanity.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the Fifteen days ending December 15, 1895:*

Stoner, G. W., Surgeon. Granted leave of absence for thirty days. December 6, 1895.

Glennan, A. H., Passed Assistant Surgeon. Granted leave of absence for ten days. December 5, 1895.

Pettus, W. J., Passed Assistant Surgeon. To assume temporary command of service at Norfolk, Va., in addition to present duties, during absence of Surgeon H. R. Carter. December 13, 1895.

Kinyoun, J. J., Passed Assistant Surgeon. Granted leave of absence for twenty-three days. December 12, 1895.

Cobb, J. O., Passed Assistant Surgeon. Granted leave of absence for two days. December 5, 1895.

Blue, Rupert, Assistant Surgeon. Granted leave of absence for eighteen days. December 3, 1895. Detailed to make physical examination of immigrants at San Francisco, Cal. December 13, 1895.

The Montreal Medical Journal announces that Dr. William Osler, of the Johns Hopkins Hospital, Baltimore, will begin, in the January number of that journal, a monthly series of articles on medical topics of the day, under the title of Ephemerides.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co. Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, JANUARY 4, 1896.

THE ACADEMY OF MEDICINE AND THE MINOR CITY HOSPITALS.

The action taken at last week's special meeting of the New York Academy of Medicine was quite different from what had generally been expected; we think, however, it is not difficult to account for. The meeting had been called to consider the following resolutions, which had been presented at the stated meeting of December 19th:

"*Resolved*, That the New York Academy of Medicine deprecates the action of the Commissioners of Charities and Correction in abolishing the consulting board of Bellevue Hospital, and the consulting and visiting boards of the City, Harlem, Gouverneur, Fordham, and Maternity Hospitals, the Hospital for Nervous Diseases, Almshouse, Workhouse, and Incurable Hospitals, and the Randall's Island Hospital.

"*Resolved*, That the New York Academy of Medicine protests against the action of the Commissioners of Charities and Correction in placing the nominations, and practically the appointments, of the consulting and visiting staffs of these hospitals in the hands of the incorporated medical schools and the fourth division of Bellevue Hospital (to all intents and purposes a monopoly) as contrary to the best interests of these institutions and of the medical profession.

"*Resolved*, That a copy of these resolutions, signed by the president and secretary of the New York Academy of Medicine, be forwarded to his Honor the Mayor, and to the Commissioners of Charities and Correction."

There were about two hundred members of the academy present at the meeting, and only forty-seven of them voted in favor of the resolutions. We had expected that the resolutions would meet with considerable opposition, for they seemed to us very injudiciously framed. They went beyond the only real cause of complaint, on which the profession is practically unanimous in indignation against the commissioners—that of the summary ejection of hospital physicians and surgeons without any stated cause—so that, had they been passed, they would have put the academy in the attitude of having administered a scolding to the members of the faculties of the three great medical schools of the city and an insult to the gentlemen composing the fourth division of the staff of Bellevue Hospital. A realization that the men constituting the college faculties and the hospital staff division in question were in no wise deserving of the reprehension expressed in the resolutions must have grown as the discussion went on, for on the first vote, taken *viva voce*, the opposition, although so decided as to lead the president to announce that the resolutions had been lost, was not the over-

whelming verdict that finally killed them, practically a vote of about three against them to one in their favor.

In spite of this vote, we believe there were not ten men in the room who would have spoken or voted against a temperate resolution protesting against the sudden and arbitrary way in which the commissioners had treated the former members of the medical staffs. That treatment, we repeat, is the only just cause of complaint that the medical profession has in connection with this matter. This we have maintained ever since the subject began to be talked about. In the *Journal* for August 24th we reprinted a letter, signed *Justitia*, that had appeared in the *Journal of the American Medical Association*, in which the writer said: "And now comes the most despicable part played by the two medical colleges, who [*sic*] ignored their plain and imperative duty to defend their own alumni. Both Bellevue and the University took advantage of the opportunity to nominate four physicians, in spite of a strong protest from the County Medical Association." At that time only the staff of the Harlem Hospital had felt the blow, and the College of Physicians and Surgeons had not yet taken action. Commenting on *Justitia's* statements, we said at the time: "We think the letter gives expression to some inaccuracies and misapprehensions, and we doubt if the writer is wise in making such a capital point of the action taken by two of the medical schools of New York."

Much of the discussion that took place in the academy seems to us to have been of an objectionable character, consisting mainly, on the one side, of assertions that the colleges had brought about the change complained of, which were met, on the other side, by the denial of a representative of one of the colleges that his school had exerted any such influence, together with an expression of his belief that a like denial could be made by the other colleges. We understand that this expression of belief is justified, for we are assured to that effect by representatives of the colleges, who assert that they took no part in devising the scheme and that they refrained from making statements to that effect before the academy partly because of the evident wish of the meeting to bring the discussion to a vote and partly out of unwillingness to answer charges which manifestly had been made without proof of their correctness. We are further informed that during the last three years the commissioners have repeatedly expressed their willingness to make this change if the colleges would approve and accept of it, but that the suggestion went unheeded by the colleges. In our opinion, the academy did right not to indorse such an unwarranted accusation against the colleges as was embodied in the resolutions, however it might deplore the one element in the commissioners' action that really was unjust.

PUBLIC GRANTS TO PRIVATE CHARITIES.

Under the heading of A Case Not Made Out, the *Sun* has recently commented on some apparent looseness with which public money has been granted to the New York Post-graduate Medical School and Hospital, and on what it considers the unreasonableness of that institution's demand for $60,000 from the Board of Estimate and Apportionment. Since that particular hospital is largely controlled by medical men, a due regard for its own honor will lead the medical profession of New York to take an interest in the matter.

It seems that in 1894 the Legislature gave the institution money out of the city's funds at the rate of a dollar a day for each bed occupied in its babies' wards. On that grant, we understand, the hospital draws about $8,000 annually. The next year, in April, 1895, the Legislature gave the same institution $30,000 per annum for its "charitable uses and purposes," and it is reported that the hospital is claiming this year from the Board of Estimate and Apportionment, under that grant, the sum of $60,000, namely, $30,000 for 1895 and $30,000 for 1896. The same Legislature gave the New York Polyclinic, under much stricter and more detailed conditions, a dollar a day for each "needy and charity patient" who occupied a bed in its wards. The same act, which is an amendment of an act of 1882, gives also to the Nursery and Child's Hospital five dollars a week for every destitute woman admitted into its lying-in wards. Whether or not this was a new grant we do not know.

The only grounds on which public money can properly be granted to private charities are that the public charities are insufficient and that public money thus given will tend to draw the money of individuals to the same uses, and thus increase its own efficiency. The grant to the Nursery and Child's Hospital, that to the Polyclinic, and the first one to the Post-graduate Hospital are perhaps sufficiently protected by the strict conditions attached to them; apparently the money can be drawn only on statements submitted, and presumably verified, of charitable work actually done. But the grant of $30,000 to the Post-graduate Medical School and Hospital is much less carefully protected; a lump sum is given for the "charitable uses and purposes" of the institution, with no suggestion of control or verification.

Such grants should, in our judgment, be most jealously watched. The temptation and the opportunities to use them too liberally, particularly when two kinds of business so different as that of a school and that of a hospital are carried on under the same roof, should not be left uncontrolled.

Due regard, moreover, should be had to economy. It appears from the last annual report of the New York Post-graduate Medical School and Hospital that during the year from October, 1894, to October, 1895, 1,125 patients were treated in the hospital, exclusive of the babies' wards, for which, as we have said, there is a special appropriation. Taking thirteen days as the average stay of patients in the hospital (the average of other hospitals), the treatment of the 1,125 patients occupied 14,600 hospital days. The expenditure of $30,000 for this service would be at the rate of more than two dollars a day for each patient, which is a larger sum than that ($1.88) expended by our richest and best equipped private hospital, the New York; and in that rate

the New York Hospital includes every expense, for salaries and for the maintenance of the library, the laboratories, the nurses' home, the ambulance service, and the out-patient department. This is assuming, too, that the 1,125 patients of the Post-graduate are all charity patients, which is probably not the case, for the building is said to contain forty private rooms, and many of the ward patients pay something for their board.

The New York Post-graduate Medical School and Hospital is engaged in a beneficent work, so is the New York Polyclinic, and so is the Nursery and Child's Hospital. It is natural that these institutions should seek to obtain as much money as possible under legislative grants; it is not their course that is to be complained of, but rather that of the Legislature of the State, which seems in the instance we have mentioned to have voted away the city's money without due care. To the end that further legislation of this sort may be avoided, we hope that all the private charities that benefit by State grants will make public detailed statements as to how they apply the funds thus obtained.

MINOR PARAGRAPHS.

THE MARINE-HOSPITAL SERVICE.

Passed Assistant Surgeon Bratton's article entitled An Arid-Region Sanitarium for Tuberculous Patients of the Marine-Hospital Service, published in this issue of the *Journal*, with the quotation it contains from Passed Assistant Surgeon Cobb's article in a recent *Annual Report of the Marine-Hospital Service*, seems to us to present a strong argument in favor of the establishment of a national sanitarium for tuberculous sailors in a locality as favorable as possible to their recovery from the disease. Dr. Bratton's suggestion that such an institution should be established in New Mexico, Arizona, western Texas, or southwestern Kansas is doubtless as good a one as could be made with regard to the question of locality. His plan includes an adjunct station at a lower level for those whose cases are advanced or complicated, also facilities for camping out in a mountainous region close at hand.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending December 31, 1895 :

DISEASES.	Week ending Dec. 24.		Week ending Dec. 31.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	25	5	23	3
Scarlet fever	123	9	135	10
Cerebro-spinal meningitis	3	1	0	0
Measles	228	24	291	19
Diphtheria	264	36	289	38
Small-pox	1	0	0	0
Tuberculosis	130	120	52	109

The New York Orthopædic Dispensary and Hospital.—The trustees announce that the nineteenth annual course of clinical lectures on orthopædic surgery, free to physicians and medical students, will be given by Dr. Newton M. Shaffer at the hospital, in East Fifty-ninth Street, on Monday and Thursday afternoons, at five o'clock, from January 6th to February 20th, inclusive.

Changes of Address.—Dr. Charles H. Bushong, to No. 30 West Nineteenth Street, New York; Dr. W. G. Grove, to No. 89 Niagara Street, Buffalo; Dr. Henry Koplik, to No. 66 East Fifty-eighth Street, New York; Dr. E. Franklin Smith, to No. 257 West Forty-fourth Street, New York.

Typhoid Fever in Connecticut.—The report of the Connecticut Board of Health for October shows an unusual prevalence of typhoid fever in the State. Out of a hundred and sixty-eight towns in the State the disease is recorded in fifty, the total number of cases reported being a hundred and eighty-nine.—*Medical Record.*

Society Meetings for the Coming Week:

Monday, *January 6th:* New York Academy of Sciences (Section in Biology); German Medical Society of the City of New York; Morrisania Medical Society, New York (private); New York Medico-surgical Society; Brooklyn Anatomical and Surgical Society (private); Corning, N. Y., Academy of Medicine; Utica, N. Y., Medical Library Association; Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., Medical Society; South Pittsburgh, Pa., Medical Society; Chicago Medical Society; Cleveland, O., Medical Library Association.

Tuesday, *January 7th:* New York Obstetrical Society; New York Neurological Society; Buffalo Medical and Surgical Association; Elmira, N. Y., Academy of Medicine; Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Franklin (annual) and Niagara (semi-annual—Lockport), N. Y.; Hudson (Jersey City) and Union (quarterly), N. J., County Medical Societies; Androscoggin, Me., County Medical Association (annual—Lewiston); Chittenden, Vt., County Medical Society; Baltimore Academy of Medicine; Medical Society of the University of Maryland (Baltimore).

Wednesday, *January 8th:* New York Surgical Society; New York Pathological Society (annual); American Microscopical Society of the City of New York; Metropolitan Medical Society, New York (private); Medical Societies of the Counties of Albany, Dutchess (annual—Poughkeepsie), and Seneca (semi-annual), N. Y.; Tri-States Medical Association (Port Jervis), N. Y.; Pittsfield, Mass., Medical Association (private); Philadelphia County Medical Society; Kansas City, Mo., Ophthalmological and Otological Society; Hampshire, Mass., District Medical Society (quarterly—Northampton); Worcester, Mass., District Medical Society (Worcester).

Thursday, *January 9th:* Society of Medical Jurisprudence and State Medicine, New York; Brooklyn Pathological Society (annual and election); Medical Societies of the Counties of Cayuga and Fulton (annual—Johnstown), N. Y.; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia.

Friday, *January 10th:* New York Academy of Medicine (Section in Neurology); Yorkville Medical Association, New York (private); Brooklyn Dermatological and Genito-urinary Society (private); German Medical Society of Brooklyn; Medical Society of the Town of Saugerties, N. Y.; Cleveland, O., Medical Society.

SATURDAY, *January 11th:* Obstetrical Society of Boston (private); Worcester, Mass., North District Medical Society.

Births, Marriages, and Deaths.

Died.

HAMMOND.—In Dover Plains, N. Y., on Thursday, December 26th, Dr. Thomas Hammond.

HENRY.—In New Orleans, La., on Friday, December 27th, William S. Henry, son of Dr. Stewart L. Henry.

POWELL.—In Atlanta, Ga., on Monday, December 30th, Dr. Thomas Spencer Powell.

WHEATON.—In Providence, R. I., on Thursday, December 26th, Dr. Francis L. Wheaton, in the ninety-second year of his age.

Letters to the Editor.

THE PAQUIN ANTITUBERCLE SERUM.

SARANAC LAKE, N. Y., *December 14, 1895.*

To the Editor of the New York Medical Journal:

SIR: In the December 7th number for your *Journal* there appeared a criticism by Dr. Paquin of an experiment with antitubercle serum reported by me in the *Journal* for November 9th. Dr. Paquin represents me as experimenting with only two guinea-pigs, and drawing conclusions from the results thus obtained. Allow me to call attention to the gross inaccuracy of Dr. Paquin's statements, referring to my experiments, in which he derides them on the ground of their having been made with two guinea pigs only. As tables giving the number of animals treated were published, I can hardly understand how Dr. Paquin could make such a misstatement unintentionally.

Reference to the article will show that the number of animals treated was five, all but one of which died several days before the controls. As for the serum, it was obtained from Dr. Paquin's own laboratory and was presumably all that he represented it to be. S. W. HEWETSON, M. D.

TYSON'S GLANDS.

1506 SPRUCE STREET, PHILADELPHIA, *December 27, 1895.*

To the Editor of the New York Medical Journal:

SIR: In the issue of the *New York Medical Journal* for December 21st, in Dr. Finlayson's paper on Eponymic Structures, from the *Glasgow Medical Journal*, December, occurs the following: "Tyson, James T., American professor of pathology, physiology, and microscopical anatomy. Born at Philadelphia, 1841. Glands of (prepuce and labia)." As I am evidently intended in this reference, I think I should state that I am not so fortunate as to have discovered these glands. They were described probably over two hundred years ago by Edward Tyson, M. D., Fellow of the College of Physicians and the Royal Society, Physician to the Hospital of Bethlem, and reader of anatomy at Chirurgeon's Hall, who was born in 1648 (?) and died in 1708. JAMES TYSON, M. D.

CIVIL SERVICE EXAMINATIONS AND THE CITY HOSPITALS.

1015 PUTNAM AVENUE, BROOKLYN, *December 30, 1895.*

To the Editor of the New York Medical Journal:

SIR: The latest news concerning the appointment of visiting physicians to the various city institutions is such as should bring the blush of shame to the cheek of every reputable physician in the city of New York. Surely, what with the grasping propensities of a small number of medical institutions and the personal pettifogging of politicians on the one hand, and the disorganized, abortive attempt at retaliation by the medical profession at large on the other hand, the standing of the profession has been brought so low that it is now seriously intended to appoint visiting staffs to the city's hospitals and asylums under civil service rules and regulations.

The predicament would be laughable were it not so sad and even tragic. What could be more absurd than to imagine some great doctor like the late Charcot, the late Loomis, S. Weir Mitchell, or Spitzka, taking a civil service examination in order to prove that he was not an idiot, not a drunkard or a criminal, and that he possessed sufficient intelligence to perform the duties allotted to him, in the same manner as a novice doctor, a clerk, or a street cleaner?

It is time that the medical profession of this city awoke to the degrading results of their bickerings and petty differences, and stood together once for all, shoulder to shoulder, and organized as a self-respecting body, ready to fight, not for mere ephemeral personal aggrandizement, but for the welfare and ennoblement of the profession as a whole.

The new members of the board of charities, I am assured, are ready to do the utmost in their power in what they believe or is shown to be the best for the institutions under their care. Let the medical bodies of New York work in a kindred spirit, and we shall see a better era for them, for the institutions, and for medical science.

LOUISE G. RABINOVITCH, M. D.

Proceedings of Societies.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Annual Meeting, held in Detroit, on Tuesday, Wednesday, Thursday, and Friday, September 3, 4, 5, and 6, 1895.

The President, Dr. WILLIAM M. WISHARD, of Indianapolis, in the Chair.

(*Continued from page 376.*)

Two Successful Operations for Traumatic Insanity.—Dr. GEORGE W. CALE, of St. Louis, read a paper thus entitled. The author said that insanity due to injuries of the head was of rather infrequent occurrence. In twenty-two hundred cases of insanity treated by Kiernan, forty-five had been of traumatic origin, while Hays had recorded sixty-one due to the same causes, out of twenty-five hundred cases. Schlager had reported five hundred cases of insanity due to concussion of the brain. The author then considered the causes and symptoms.

The first case had been that of a man, twenty-six years of age, a carpenter. His family history was good; no case of insanity or of serious nervous disease had ever been present. In June, 1885, the patient had received a blow from a club in the hands of a negro, the wound inflicted having been midway between the fissure of Rolando and the external occipital

protuberance, slightly to the left of the median line. It had been treated as an ordinary scalp wound, and it had suppurated for three months. Four years after the inception of the wound the man had complained of severe pain in the left parietal and occipital regions. In October, 1888, he had been sent to an insane asylum, where he had remained sixteen months. His condition had improved and he had returned home, but had again been sent to the asylum, where he had been detained five months. Four months later he had been brought to Dr. Cale, who had diagnosticated traumatic insanity and advised an operation, which had been consented to. The patient had recovered.

The second case had been one of acute mania following an injury. An operation had been performed as in the first case, and the patient had recovered.

Dr. William Fuller, of Grand Rapids, Mich., had operated in two cases of insanity due to traumatism. One patient had been discharged from an insane asylum as incurable. When the dura mater had been opened there had escaped some serum. For a few days subsequent to the operation the patient had been rational, but as soon as the wound had closed up the hallucinations had returned. The speaker had then punctured the brain in two or three different directions, but with no result except to establish drainage. The man had died two months later, and a post-mortem examination had revealed a tuberculous abscess in the fissure of Sylvius, containing about two teaspoonfuls of pus.

Dr. J. Frank, of Chicago, reported an interesting case of insanity in which he had trephined, removing a large piece of bone. A piece of the brain had also been excised for examination, and had seemed to be healthy. The patient, after having been in an insane asylum for five years, had made a complete recovery, and had taken up the thread of life where she had left it. She had continued in this way for a year, and then had relapsed. On opening the dura, there had been a gush of cerebral fluid. Dr. Frank firmly believed that it was not the depression of the skull which had produced the bad result, but that at the time of the injury there had been a chronic inflammation of the meninges or a slow inflammatory process which threw out cerebral fluid. This fluid might have been in the ventricles between the dura and the brain or in the tissues of the brain filaments themselves, and the theory of concussion held by the profession he believed was erroneous. He had repeatedly made experiments on dogs by rapping them on the head and rendering them insensible, and immediately thereafter effusion had been found.

Dr. Maas, of Detroit, thought we were in the dark as to the exact cause of the insanity in many cases, and that there was evidently some vaso-motor disturbance.

The Use of Dry Heat and of High Temperature in the Treatment of Joint Diseases.—This paper was read by Dr. William E. Wirt, of Cleveland. Shortly after reading a description of this treatment in the medical journals, he said, he had encountered a case of rheumatoid arthritis in which he had resorted to this method. The treatment had been followed by great improvement in the motion of the joint and in the comfort felt by the patient. Dr. Wirt also reported a case of rheumatism of a year's standing in which there had been more or less fixation. He had broken up the adhesions, made use of the application of heat, and had raised the temperature to 290° F., which had been followed by decided improvement in the ease with which the patient could move the joint and in the relief from pain.

Ulcers of the Leg; All can be Cured.—This paper was read by Dr. Carter S. Cole, of New York. Whatever constitutional conditions obtained that favored morbid states, or that retarded a return to a healthy state, he said, such a diathesis should receive its proper treatment, whether ulcers existed or not. For systematic purposes, ulcers of the leg were designated by the author according to their appearance as healthy, irritable, indolent, etc. In intractable cases, he was inclined to place foremost thorough washing with soap and water and good scrubbing with a stiff-bristle hairbrush. If the ulcer was inflamed, irritable, or painful, anæsthesia might be required for this and subsequent steps. The next step was a thorough cleaning out of all soft granulations and the base of the ulcer with a sharp curette. The edges of the ulcer were scraped away, and in many cases with a curved sharp bistoury he nicked the circumference at intervals of about a quarter of an inch. If much hæmorrhage followed, a pad of gauze wrung out of a two-per-cent. solution of carbolic acid was placed over the wound, and a firm compression bandage applied from the toes to the knee, the wound having been previously cleansed with the carbolic-acid solution. The dressing, when used, was allowed to remain for twenty-four or forty-eight hours, after which he considered the ulcer to have become a simple one and amenable to treatment as follows: No further lotion was used. The wound was wiped off with dry cotton, and over it and completely covering it he placed strips of diachylon plaster to protect the ulcer. Over the surgeon's plaster he applied a pad of sterilized gauze, held in place by strips of rubber adhesive plaster, or often simply by a bandage. He then used a firm muslin bandage from the toes to the knee, making equable compression. The bandaging should be carefully done. Sometimes he used two bandages three inches wide and eight yards long. This bandage was not removed unless the discharge came through, or the leg became painful, or the bandage got loose. When he redressed the ulcer he again used simply dry absorbent cotton to cleanse the wound, and proceeded as before. Often after two or three dressings the bandage might remain from five to seven days without being disturbed. In some cases a thin scum formed on the ulcer, which must be removed by going over the surface lightly with a curette. With this treatment, in ordinary cases, about three weeks would suffice for an ulcer of even a dozen years' standing. In extraordinary cases as much as six weeks might be necessary.

How to Diagnosticate Sexual Derangements in the Male.—Dr. Eugene Fuller, of New York, read this paper, and endeavored to impress upon the profession the fact that in the majority of instances sexual derangements in the male were caused by pathological processes in or about the seminal vesicles, and, further, that they accomplished their results by interfering with the mechanism of ejaculation. He called attention also to the fact that this side of the question had been almost wholly neglected by preceding writers on sexual disorders, who had devoted themselves largely to psychological conditions in this connection, the result being that the great majority of the profession associated sexual disturbances with some radical mental defect. Sexual derangements in the male should be diagnostically arranged in four classes: 1. Those dependent on inflammation of the seminal vesicles. 2. Those dependent on neuroses. 3. Those dependent on primary mental disease or degeneration. 4. Those dependent on general malnutrition and debility. The order of this classification corresponded to the frequency with which these different forms of diseases were encountered in practice. In explanation of the first class of cases, the writer stated that it was needless to go into details, since he had recently reviewed that subject very fully in a book.

Where inflammation of the seminal vesicles existed, there was generally a previous history of urethral or bladder in-

flammation, sexual abuse, and the like, all of which were agents tending to produce localized inflammation in the seminal vesicles. The second class of causes either inhibited or excited the sexual centre by means of reflex nervous action. The third class included the different forms of paranoia, in which the sexual sense existed in a perverted form. The fourth class was a small one. It included individuals, generally young or middle-aged, who made complaint that they were capable of little sexual exertion and that feelings of prostration and exhaustion resulted whenever coitus was attempted.

The writer made some special remarks on the different appearances that the varying grades of inflammation of the seminal vesicles present to the sense of touch, and called attention to the fact that in cases of extensive adjacent inflammation involving both sacs an inexperienced examiner was likely to err in diagnosis, mistaking the condition for hypertrophy or inflammation of the prostate. The author held that to become perfected in the feel of the seminal vesicles the finger needed as much practice as that of the gynæcologist did in feeling the ovaries and the tubes. To obtain the necessary practice, he advised the genito-urinary surgeon to make it customary to examine in this manner every male patient coming into the clinic until all normal and pathological conditions could be fully appreciated.

Chronic Inflammation of the Seminal Vesicles with Hæmorrhage.—Dr. S. P. Collings, of Hot Springs, Ark., read a paper on this subject, in which he said there had apparently been little known of the pathological conditions of the seminal vesicles until within recent years. The usual cause of this trouble was the extension of gonorrhœal inflammation from the prostatic urethra through the ejaculatory duct into the vesicle itself; at least, there was usually a history of a former gonorrhœa with a chronic deep urethral trouble remaining. The vesicles were sometimes involved in very acute and severe gonorrhœal inflammation, with or without the implication of the spermatic cord and the epididymis. They might also be involved in a tuberculous inflammation, although practically never primarily.

One observer had reported a case in which the autopsy had shown that the vesicle had been primarily involved. The most important symptom was the disturbance of the sexual function. The character and appearance of the seminal fluid were more or less changed. Its consistence was so increased at times that it was gelatinous. The diagnosis of subacute or chronic inflammation of the seminal vesicles would be difficult to make, were we to depend entirely upon symptoms in reaching a conclusion. They were vague and at times misleading, except the appearance of the blood in the semen, which, if thoroughly mixed with it, would denote a diseased condition of one or both vesicles at once. The author reported two cases and discussed the treatment as applied to them, as well as that generally used in the subacute and chronic forms.

He said that if inflammation of the vesicle occurred in one whose urethra was strictured, the stricture should be cured before we could hope for permanent results in the treatment of the inflamed vesicles.

Syphilis and its Treatment.—This paper was contributed by Dr. C. T. Drennen, of Hot Springs, Ark., who spoke more directly of the treatment of this disease in connection with the use and abuse of certain so-called antisyphilitic remedies. He said that we were unable as yet to form definite conclusions as to the usefulness of serum therapy in the treatment of syphilis from the most recent researches, but the reports were quite encouraging, and there was hardly a doubt that it possessed value in at least the tertiary lesions. Fournier believed the good effect to be due, not to any specific, but to its rehabilitating effect upon the system. The author said that the hot water at Hot Springs was well known to exert an influence peculiar in its effect for good, and in it we had a veritable Mecca for syphilis. That its action was eliminative, stimulative, and antiseptic, and that with its use larger doses of mercury and the iodide of potassium could be given without harm was known to the writer from experience and observation; that its exact or specific action was unknown, and that its value was attested by the multiplied thousands throughout the country.

Dr. William T. Belfield, of Chicago, described and presented an instrument for the purpose of securing asepsis in bladder and prostate operations.

The Element of Vascular Compression in Fracture Treatment.—This paper was read by Dr. Thomas H. Manley, of New York. The author considered at length the anatomical structure and vascular function as related to fracture. The extent of damage borne by the vessels in a given case of fracture would depend primarily upon the degree and quality of force applied and the line of treatment adopted. In a series of experiments made during the past year on the blood and blood-vessels, under a multiplicity of conditions in the lower animals under anæsthetics, one question which the author had spared no pains to determine definitely had been that of whether in fracture, as a general rule, the circulation to the distal part of the limb was retarded. Without entering into details on the great diversity of vascular phenomena observed in a frog's web under the microscope, after single, multiple, and compound fractures had been produced, it would suffice to say that, with few exceptions, immediately and for a considerable period of time after the bone had been broken, the circulation in the capillaries and the smaller arteries was completely arrested. In several it had been found that for several days all the smaller vessels were motionless, and in a few they had so remained until after the fractured ends of the bones had united. These experiments had been extended to the shafts of the limbs of pups, of kittens, and of adult dogs, of different ages and of various sizes.

The Significance of Fissure Fractures of the Articular Ends of the Long Bones.—Dr. H. O. Pantzer, of Indianapolis, reported a case of fissure fracture involving the outer third of the head of the radius, which had loose attachments to its body. An excessive callus had developed in its site, without affecting union. This splinter and callus had been removed, and reposition of the joint had been easily attained. The crepitus felt at the first examination and the failure to find it again should have suggested fissure fracture in the opinion of the author. When the first dressing had been removed, the limb had seemed to present a perfect condition, and to promise full restoration. These prospects had been changed as soon as passive and active motion had been begun. The probability was that the attempts at mobilization for this kind of injury had been made too soon, and that they had been at least partially responsible for the subsequent unfavorable developments. The author concluded that when undue painfulness and subsequent swelling, with no gain or even a loss of mobility, attended the efforts of mobilization after kindred lesions, we should delay further efforts at mobilization. The possibility of a fissure fracture should be considered in determining the diagnosis and treatment of all cases of joint injury.

Imbrication, or the Lap-joint Method—a Plastic Operation for Hernia.—Dr. E. W. Andrews, of Chicago, stated that the principle of imbrication, or overlapping the several apo-

neurotic layers of the abdominal wall, might enter into other abdominal operations to advantage, as he had repeatedly shown. The present paper referred only to its use in inguinal hernia. Here he made use of it to supplement and reenforce existing methods, without losing sight of their good qualities. While based upon the best modern, open method, and while confessedly an outgrowth of the Macewen, Bassini, Halsted, and similar operations, yet the carrying out of the imbrication idea so far changed the technics as to make it as different from them all as they were from each other, and perhaps entitle it to the term a new operation. It was impossible, said the author, to describe this operation without going into details concerning those which had preceded it.

The interlocking or overlapping principle of uniting the musculo-aponeurotic layers of the abdomen was in reality an outgrowth of the author's clinical experience rather than of theory. He had adopted it at first as an expedient in cases where the Bassini operation had seemed difficult and had needed supplementing, but of late the value of the principle had seemed to him more and more evident, and he had used it in all his cases. The author concluded as follows: 1. Any successful method of radical cure must be a true plastic operation upon the musculo-aponeurotic layers of the abdominal wall. Cicatricial tissue and peritoneal exudates were of no permanent value. 2. A large, strong flap should be made, of any needed size to fill the internal ring. 3. There should be triplicate layers of aponeuroses. 4. Interlocking of layers, giving broad surfaces of union, should be brought about. 5. Shortening of the anterior as well as of the posterior wall of the canal should be effected, making them mutually supporting, and relieving tension on deep sutures. 6. The spermatic cord should be amply protected.

Further Observations on the Radical Cure of Rupture by the Intrapelvic Method, with Illustrative Cases.—This paper was read by Dr. Charles A. L. Reed, of Cincinnati. In what essential particulars, he asked, did this intrapelvic method differ from the several methods of radical operation now in vogue? It differed, in the first instance, in the fact that it was intrapelvic, while the others—Bassini's, Halsted's, McBurney's, Macewen's—were extrapelvic.

The essential point of difference between Dr. Reed's operation and that of Bassini consisted in leaving undisturbed the extremely tense fascia composing the anterior wall of the ring; in leaving the spermatic cord in the position which Nature designed for it, and entirely protected by the normal fascia; in closing the internal ring on the inside of the pelvis, and in protecting it by a strong peritoneal pad; in avoiding the menace to virility arising from a transplantation of the cord, its possible constriction by an artificial ring of tense fascia, and its necessary investment by an inflammatory exudate; in increasing the resistance of the parts by fortifying the fascia forming the anterior wall of the ring; and by increasing and making permanent the obliquity of the cord within its normal canal.

The advantages of the operation consisted in securing by the unfolding of the redundant but attenuated median fascia the formation of a column which, when consolidated by inflammatory adhesions, had a certain retentive and supportive power, the influence of which was of value in preventing recurrence. The anchorage of the recti in the median line restored the retentive power of the wall.

The Surgical Treatment of Hæmorrhoids.—Dr. Henry O. Marcy, of Boston, followed with this paper, which was in the nature of a reply to the strictures cast upon the Whitehead operation by Dr. Edmund Andrews, of Chicago, in a paper read before the last meeting of the Illinois State Medical Society. Dr. Marcy believed that if in the statistics given by Dr. Andrews the names of the operators had been mentioned, most of the disastrous results would be found to have followed the work of incompetent men. His results had been excellent in cases in which he had done the Whitehead operation slightly modified by himself.

Clubfoot.—Dr. John Ridlon, of Chicago, defined this condition as a distortion of the foot in its relation to the leg. The simple and compound varieties of clubfoot were dealt with. Nearly all the congenital cases, he said, presented the compound variety—equino-varus; a few presented equino-valgus; rarely was there seen a simple calcaneus. Of simple equinus, the author had met with but a single instance, and of simple varus and simple valgus, he had seen none. Of the acquired varieties, simple equinus was by far the most frequently found; next in frequency we found simple valgus; then equino-varus, calcaneo-valgus, equino-valgus, simple varus, and varus in one foot and valgus in the other. The acquired deformity occurred more than three times as often as the congenital form. The ætiology of the congenital forms was next dealt with, as well as that of the acquired forms.

Vaginal Castration.—This paper was read by Dr. E. E. Tull, of New York. The author thought that this method resulted in a lower mortality and a shorter convalescence, and offered a wider adaptability, as it might be practised in patients too weak for abdominal section.

A New Phase of Cœliotomy.—Dr. F. J. Groner, of Grand Rapids, Mich., told of a suit for malpractice which had just been terminated in Grand Rapids. The suit had been begun against a doctor some time ago, and had been for fifty thousand dollars. The defendant had died, but the court had held that the cause of action survived, and that the suit could be brought against the estate. The jury had returned a verdict for ten thousand dollars. The author stated that he knew that there had been no malpractice, because he had been interested in the case and knew just what had been done in the operation. He found fault with the laws which had permitted a suit against a doctor to survive his death and be a menace to the widow and children. The speaker thought that the next legislature should remedy the law. He had had the draft of a bill prepared which he thought would remedy the present law, and he read it.

Results of Five Years' Experience with Intra-abdominal Shortening of the Round Ligaments.—This paper was contributed by Dr. J. Frank, of Chicago. Since his last publication, in November, 1889, he had had the opportunity of performing this operation seventeen times, with only one failure, and without any deaths. All the seventeen patients had been operated upon for retroversion, prolapsus, and retroversion with prolapsus of the uterus.

The technics of the operation was as follows: The median incision was made a trifle lower than for ordinary cœliotomy, the round ligament was caught up anteriorly with a sharp or blunt hook, and was then held tight by an assistant. A small, full-curved needle threaded with fine silk was then passed through the loop of the round ligament and was brought back in the reversed manner through the other half of the loop. No portion of the broad ligament was included in any of the sutures. Too much stress could not be placed upon this particular procedure of passing a needle through a part of the cord and not around it, for in passing the needle around the cord there was danger of strangulation, as the blood and nerve supply would be entirely shut off by this faulty method of placing the sutures around the ligament.

About fifty per cent. of the cases had been under the au-

thor's observation since the time of the operation, which in some instances had been as long as two years, and in all these the uterus had retained its corrected position. This operation, said the author, should be performed in preference to any other in all cases where the uterus was prolapsed or immediately fell back upon being replaced with a uterine sound, and where pessaries and tampons afford no relief, clearly showing that there must be some force which did not permit the uterus to remain in its normal attitude.

The Present State of our Knowledge of Cancers and Tumors.—This was the subject of the address in surgery delivered by Dr. Theodore A. McGraw, of Detroit. If we compared the ideas, he said, that had prevailed relative to these diseases thirty years ago with those which the profession held to-day, we should find a change which marked rather a clearer view of the nature of the problem than any actual gain in its solution. Before Virchow, the subject of tumors and cancers had been wrapped in the greatest confusion. Tumors were divided and classified in that era according to their clinical histories. They were divided into the innocent, which were looked upon as purely local, and the malignant, which were regarded as due to dyscrasiæ the seat of which was in the blood. Under the influence of the new cellular pathology, the faith in so-called dyscrasiæ had been abandoned and supplanted by a new doctrine which taught that tumors and cancers resulted ever and always from aberrations in cellular nutrition, development, and growth. It might be said that during this time the energies of the profession, so far as tumors were concerned, had been confined almost solely to this channel. The most successful attempt to account for the origin of tumors and cancers was that of Cohnheim.

The arguments offered in defense of the parasitic theory of cancer were: 1. The microscopic evidences. 2. The frequent occurrence of self-inoculation and the evidently infectious course of the disease in the organism. 3. The endemic occurrence of cancer in certain localities, and, in rare instances, in the same houses. 4. An occasional success in inoculating the disease in animals. The arguments against it were the many instances of hereditary tendency, the general failure of experiments in inoculating, and the fact that metastases occurred, not through the transfer of parasitic germs from one point to another, as was usual in parasitic diseases, but by the transmigration of cells bearing the same character as the cells of the original tumor, the subsequent proliferation of the migrating cells, and the fact that not only cancers but tumors of all kinds had a greater or lesser tendency to result in metastases. The tendency was exhibited by embryonic remains and histoid tumors to develop into malignant disease.

Dr. McGraw said that physicians should be better instructed in the means of diagnosis and in the necessity of early operative treatment. And last, but not least, the laity should be induced to assist, not only by liberal contributions of means, but by that intelligent co-operation which would lessen our difficulties in collecting evidence and making post-mortems, and keeping the sufferers out of the hands of the quacks.

(*To be continued.*)

SOCIETY OF THE ALUMNI OF CHARITY HOSPITAL.

Meeting of December 4, 1895.

The Vice-president, Dr. Daniel P. Pease, in the Chair.

Enlarged Spleen.—Dr. Charles J. Proben presented an infant, aged seventeen months, with a large splenic tumor producing marked leucocytosis. When two months old it had been in a miserable condition, with sprue, bronchitis, and anæmia. It had been bottle-fed on condensed milk and farinaceous food. It had been brought for treatment in June, when about a year old, for the anæmia and the poor general condition. The nurse said it had always been very pallid, with a cyanotic appearance around the mouth and eyelids at times. Alternately it suffered from indigestion and from bronchitis. There was constipation with fœtid movements, which was difficult to manage. At times it suffered from otorrhœa, a visible palpitation of the heart, and the progressive anæmia which gave it an appearance as if it were suffering from malignant disease. The abdomen was always prominent. Examination when the child was first presented revealed the following: Marked pallor of the skin resembling a cachexia; the mucous membranes almost white, the lower incisors (which had appeared at the age of eleven months), the following two incisors, and two bicuspids were discolored, as was seen in rhachitis. The anterior fontanelle was open, very much depressed, and enlarged, measuring about two by three inches. There was the rhachitic rosary, and the epiphyses of the long bones were enlarged. The muscular development was poor. There were adenoid vegetations of the nasopharynx, and there was general adenopathy. The heart and lungs appeared normal. The abdomen was strikingly large, protuberant, tense, tympanitic over the right half, and dull, the dullness merging into flatness laterally on the left side. This dullness extended from the eighth rib down into the pelvis. Palpation discerned distinctly a large, hard, movable tumor, sharply defined and notched near the median line. A bruit was heard. The liver was enlarged, projecting two fingers' breadth below the ribs. There was slight lumbo-dorsal scoliosis. A diagnosis of rhachitis with hypertrophy of the spleen and marked leucocytosis was made, and the patient was put under treatment after the blood had been examined and found to contain an excess of leucocytes and to show changes in the red corpuscles. Plasmodia were not found. Iodide of potassium with mercury was administered, but could not be borne by the patient, owing to irritability of the stomach. Inunctions were used for a few weeks without result. Quinine with arsenic was given without result, also iron, etc. Strict diet was enforced. The patient continued to get worse, and was sent to the country for three months, which improved it slightly. After its return it was seen and the tumor again examined. It had increased in size, occupying fully half the abdomen. The cold weather made the infant feel poorly, though its appetite was voracious. There was itching of the abdomen, and pain was experienced when the little one was allowed to stand, probably from a dragging of the tumor. It could not walk. As malarial disease and leucocythæmia were excluded, the only ætiological factor seemed syphilis, hence a fifth of a grain of mercury with chalk was given three times a day. After about three weeks' treatment there seemed to be a diminution in the size of the tumor, and the treatment would be continued. Many would pronounce this a case of leucocythæmia, but the blood examination had ruled this out. The only possible factor seemed to be syphilis. Why it had not improved at first it was impossible to say. Meanwhile it would be kept under observation and presented again in a few months.

Dr. R. C. Newton spoke of a patient whose picture he had shown to the society last winter, in whom the spleen had been of about the same size relatively as in the case just presented. The blood had contained between 3,000,000 and 4,000,000 red and 175,000 white corpuscles to the cubic millimetre. In the case presented, he would suggest the richest

diet, plenty of animal food, cream, etc. If the child could not take cod-liver oil, perhaps cocoanut oil externally applied would be beneficial. He would insist upon plenty of fresh air and sunlight.

Dr. Proben said that the child took an abundance of food; in fact, ate enough for three babies of its size. In the treatment of leucæmia some had used bone marrow with excellent results; others recommended transfusion of blood. The great difficulty was to find the ætiological factor, and here examination of the blood was useful; if it was not conclusive, the therapeutical test must be resorted to.

Intraligamentous Fibroid; Bicornute Uterus. — Dr. George H. Mallett presented a specimen removed a few days previous. The patient was forty-three years old and unmarried. She had been perfectly well until eight months ago, when she complained of pain in the abdomen and back, which recurred every three weeks, lasting a day. Later the pain became more frequent. Upon examination a large, smooth, ovoid tumor, corresponding in size and feel to a gravid uterus of seven months, was felt in the abdomen. She menstruated profusely for five days previous to the operation. The breasts contained colostrum. Upon opening the abdomen, the tumor so closely resembled a gravid uterus that a second vaginal examination was made and a diagnosis of intraligamentous fibroid was determined upon. It was attached to the uterus between the bladder and the uterus, and was enucleated with great difficulty, much blood being lost. The hæmorrhage was so profuse and the raw surface so extensive that it was thought advisable to do hysterectomy. After removal the uterus was found to be bicornute. The interesting points in the case were the resemblance of the tumor to a gravid uterus and the difficulty of removing it, also the question of drainage. The speaker had packed with gauze and drained by the vagina. The patient gave promise of making a rapid recovery.

Dr. D. E. Walker said the case was interesting on account of the simulation of pregnancy. Colostrum in the breast was not a sure sign, even in primiparæ, as it was found in cases of fibroids, or might even appear from a simple irritation. In the diagnosis of fibroid he thought the hard cervix would have had more to do than anything else; also the menstruation going on and hæmorrhages occurring would lead one to suppose that it was not a case of pregnancy, although they sometimes occurred in cases of pregnancy.

Dr. H. T. Hanks thought there was no way of being absolutely sure in such cases before opening the abdomen, but one could be very sure of whether there was or was not a gravid uterus by making a thorough examination under ether. The soft cervix, the pulsating uterine arteries, and the development of the breast were important signs. He never performed hysterectomy without first introducing a sound into the uterus. He thought one could not be too careful to distinguish between a gravid uterus and a uterus with a tumor attached, and a careful study of the means of distinguishing them should always be made by the abdominal surgeon.

Dr. Ralph Waldo said that in the case presented he had been glad to hear that Dr. Mallett had drained the abdominal cavity through the vagina. In hysterectomy one often did much violence in the abdomen because the adhesions were apt to be extensive, and many times the growth was infected, so that in spite of all possible care the abdominal cavity would become infected, and in these cases drainage was necessary. He left the gauze undisturbed for three or four days, and then removed a little each day till all had been removed at the end of a week, and, in one case at least this winter, so much septic material had been drained out that he was convinced the patient would have lost her life if the upper end of the vagina had not been left open and packed with iodoform gauze.

Dr. Mallett said that the hardness or softness of the cervix of a uterus containing fibroids was not an infallible test, as only the day before he had seen a hard uterus removed which contained a fœtus; neither did the menstrual history count for much unless we were sure of its accuracy. He knew Dr. Hanks would not criticise the method of drainage by the vagina, because he had been one of the earliest in this country to advocate it.

Endometritis.—Dr. Ralph Waldo, in a paper on this subject, said that the existence of endometritis without more or less metritis was decidedly questioned by many. He believed that all gynæcologists who admitted that there was such a disease as metritis also admitted that it was always associated with a certain amount of endometritis. The existence of endometritis was assumed without entering into its discussion. It was very necessary to consider the anatomy of the endometrium in order to thoroughly understand its treatment when diseased. If it was a mucous membrane, it differed from all other mucous membranes of the body in that its epithelial layer was very thick and the derma comparatively thin and directly and firmly attached to the inner muscular coat of the uterus, muscular bands connecting the two together. The endometrium contained a large number of glands, which extended through the entire thickness of the membrane, the dilated extremities being firmly imbedded in the derma itself. It would be seen, therefore, that it was almost impossible to remove the endometrium completely, but still it was very possible to remove the epithelial layer, including the glands, excepting their dilated extremities. During the menstrual flow there was marked hyperæmia of the endometrium, resulting in hæmorrhage and excessive secretion from the glands, associated with exfoliation of quite a portion of the epithelial layer, which was rapidly replaced during the interval. During childbirth this entire epithelial layer, down to the derma, was thrown off, and it was several months before this could be reproduced sufficiently for the patient to menstruate. From the most extended research it was very probable that the ancients treated endometritis in a manner similar to that now followed. For convenience of description, the affection might be divided into, first, that affecting the cervix, acute or chronic; second, that affecting the entire endometrium, including that of the cervix and body, acute or chronic. Of course this was not from a pathological standpoint, but it sufficed for a careful description of the condition. Special stress was laid on the fact that not all cases of endometritis required local treatment; in every case the general health must be thoroughly looked after as well as the local condition. In the acute forms, drainage and rest in bed were the main points in the treatment. In the chronic forms, where the endometrium was extensively diseased, the treatment consisted in the establishment of thorough drainage by dilating the cervical canal, if necessary, never by the use of tents of any kind, and thoroughly scraping the diseased endometrium so as to remove the entire epithelial layer, but of course not the entire endometrium itself, followed by thorough intra-uterine douching with boiled water, excepting in very septic cases, and packing the body of the uterus firmly with an antiseptic gauze, such as iodoform gauze, and allowing it to extend loosely through the cervical canal. This was entirely removed at the end of twenty-four, at the longest forty-eight hours, and the uterus was not repacked. This was done under the strictest antiseptic precautions, after administering

a general anæsthetic, and the patient was kept in bed from three days to a week. The author mentioned the fact that caustics had been extensively used, but as a rule they did the patient a great deal of harm. Astringents had also been used; as a rule they did neither harm nor good. Many kinds of pessaries and medicaments of innumerable descriptions also had been used, but he considered that in most cases the treatment he had mentioned was by all odds preferable.

Dr. Hanks said that years ago antiseptic precautions had not been taken. He remembered one distinguished physician who had brought from Europe iodoform-gum pencils for treating endometritis. He carried these in his waistcoat pocket and used them when needed, and he and many others observed septic metritis in their practice as a result. The speaker thought hot water the best for sterilizing instruments, and for that reason looked for something better than hard-rubber dilators, which he had invented fifteen years before. He had had a set manufactured of aluminum by Stohlmann, Pfarre, & Co., and he found them very satisfactory. He believed thoroughly in packing the uterine cavity, and thought one could cure cases of chronic endometritis in half the time that had been taken before this method had been suggested by Dr. Polk. In his own practice in the Woman's Hospital he used equal parts of carbolic acid and glycerin as a medicament. He had used the mixture exclusively for four years. Until this present fall, he had used iodoform gauze always for packing, but it was objectionable on account of the cost and its destructiveness to the instruments. After vaginal hysterectomy, he found that they had to be repolished after being used with it. He had been experimenting with other gauzes, and had found a four-per-cent. solution of carbolic acid in glycerin, or a two- to four-per-cent. solution of hydronaphthol in glycerin quite as satisfactory as iodoform gauze for intra-uterine packing and far preferable for vaginal packing after hysterectomy. He kept the gauze in the uterus about thirty-six hours. After vaginal hysterectomy he kept it in the vagina for six days, and found the packing, with either preparation, at the end of that time perfectly sweet. The hydronaphthol was easily dissolved in twice its weight of ninety-five-per-cent. alcohol, and the glycerin should always be boiled before using either carbolic acid or hydronaphthol. The secret of good results with gauze was in the glycerin; for this purpose the gauze should be quite moist. Those who wished to be sure that all the steps were properly aseptic should buy the best gauze roller bandages of different widths, boil them for an hour, unroll them with clean hands, dry them in a dry compartment, place them carefully in a glass jar, turn on the carbolic-acid or hydronaphthol glycerin, and finally turn off all free glycerin and seal the jar.

Dr. Carter S. Cole spoke of using creolin gauze. One of the valuable features of the gauze was that it came in contact with every part of the uterus, and when taken out would bring with it the *débris* left in the uterus after curetting; moreover, while it was in the uterus it acted as a drain and as a hæmostatic. He thought iodoform gauze most largely used, but, as it did not go in sweet, it was hardly fair to expect it to come out sweet. It had a healing effect upon the mucous membrane everywhere, and if we were sure that the iodoform was sterile, it was probably the best gauze for general use. The speaker said the Falloppian tubes played an important part in causing endometritis, and sometimes had to be removed before a cure could be effected. As to the medicaments, it was uncertain how much good they did.

Dr. Walker had been glad to hear the reader of the paper condemn sponge tents and all other kinds of tents as interior dilators, because they not only prevented drainage, but might during a uterine contraction force some of the uterine contents through the Falloppian tubes or cause the absorption of septic material, thus producing trouble outside of the uterus. Escharotics had undoubtedly been productive of great harm, but the speaker thought that carbolic acid was sometimes erroneously included among these. The carbolic acid one got at many drug stores was escharotic, but Calvert's carbolic acid, and probably a few others, did not produce an eschar after an ordinary application. He used Calvert's dissolved in glycerin, and whenever he had a cut on the hand he applied this to the very bottom of the cut, and thus prevented danger of infection during an operation. The cut would heal rapidly without inflammation or scarring.

Dr. Brooks H. Wells said that all methods of treating endometritis aimed at the destruction of the lining of the uterine cavity. He did not believe in an exploration with the dull curette, but used the sharp irrigating curette, and while scraping off the diseased tissue had a sterilized salt solution or plain boiled water running in the uterus. By using the ordinary sharp curette for the main body of the uterus and a small narrow curette for the cornua the mucous membrane could be thoroughly removed. He did not apply any escharotics. He washed the uterus clean and then drained with iodoform gauze.

Dr. Waldo said he considered carbolic acid and glycerin in most cases a thorough antiseptic, and not a caustic. He thought a wet packing very advantageous, because it assisted drainage. If the endometrium was a mucous membrane, it differed from every other mucous membrane of the body. If it was completely scraped off, which was a very difficult and improper procedure, complete occlusion of the uterus would follow. An endometrium would never be reproduced unless part of the original was left, for instance, the cells in the cup-shaped cavities at the ends of the follicles. In regard to exploratory curetting, he used the dull curette instead of a sound. He thought the irrigating curette an excellent thing.

Digital Examination in the Diagnosis and Treatment of Diseases of the Throat and Nose.—Dr. S. Kohn, in a paper on this subject, spoke of the importance of diagnosis in the practice of medicine. Clinically, palpation and digital examination had been considered of the highest importance in physical diagnosis. While inspection ranked first, palpation was a close second, since it revealed characteristics which the eye could not see. The author thought the general practitioner had neglected digital examination in diseases of the throat and nose, and he wished to emphasize its importance. He advised supplementing instrumental examination by a careful palpation of the parts, after thoroughly disinfecting the hand, introducing the index finger to the posterior pharyngeal wall, cautiously palpating the tonsils and perhaps the nasopharyngeal space and upper larynx, and feeling certain changes which the eye could not see. The change visible to the eye was a change in conformation, such as that of enlarged tonsils and that of tuberculous swelling of the epiglottis or of the arytænoid cartilages, while the index finger could feel whether the tonsil was made up of dense organized connective tissue or of soft granulation tissue, and this would enlighten one as to the method of abscission to be followed, whether with the guillotine or with the snare, as in the hard connective-tissue tonsil the danger from hæmorrhage following the operation with the amygdalotome was greater than that following the use of the cold snare or the cautery loop. Again, the eye detected a swelling running along the border of the posterior faucial pillar: the index finger would feel that this swelling was hard and unyielding, pointing to

the diagnosis of possible incipient malignant disease; and implication of the submaxillary lymphatics, discoverable by palpation, made the diagnosis a certainty. While a tense, glazed, protuberant swelling seen upon the posterior pharyngeal wall of a child led to the supposition of retropharyngeal abscess, the detection of *fluctuation* by the index finger left no room for doubt as to the diagnosis. While cleanliness was the first requisite to a proper digital examination of the throat, the second was gentleness of manipulation, and the third a thorough knowledge of the normal topography and feel of the parts. He spoke of its use in adenoid vegetations, where often a rhinoscopic examination was impossible. If the mass was soft, pulpy, and easily crushed, it could perhaps be removed by crushing and scraping with the finger nail at the time of examination. If the child was enveloped in a strong band of toweling, imprisoning both upper extremities, and held sitting upright upon the lap of a nurse, the entire operation could be completed in a few moments without narcosis, with or without instruments. Digital examination was invaluable in detecting malignant disease of the throat, as careful palpation with the index finger would reveal induration, raising the question of malignancy, which would be settled by a microscopic examination. In follicular amygdalitis it was of great value. Foreign bodies were often felt by the finger when they could not be seen by the eye. In diseases of the nose the tactile sense had not such a wide field of application. The author spoke of a case of rhinolith which the index finger had succeeded in dislodging after all instruments had failed. In the Asch operation for deflection of the nasal sæptum the index finger was introduced into the nostril on the side of the convexity of the sæptum, and pushed the fractured sæptum over to the other side, after which the splints were introduced.

Dr. D. Bryson Delavan thought palpation an exceedingly valuable aid in many cases, but said it should never supplant the laryngoscope or other instruments of precision. Palpation in a nasal cavity was seldom applicable. In the retronasal space it was a valuable aid, yet even here it was not well to subject the patient to it if the rhinoscopic mirror could be used. The employment of digital examination should be cautiously entered upon, and the physician should be careful not to inflict pain in examining acute lesions. Regarding the use of anæsthetics in the removal of adenoids, the Germans almost invariably operated without an anæsthetic, the French sometimes did and sometimes did not, and the English, practically, always employed one. The speaker considered the English idea the right one; not only was it humane, but one could obtain more perfect results in the thorough removal of the offending tissue. Palpation was valuable in the diagnosis of malignant growths and foreign bodies, and no expert man should be without a thorough knowledge of it. It ought not, however, to take the place of instruments.

Dr. Proben said that in small children quicker results were obtained from digital examinations, as in the case of retropharyngeal abscess. In the case of intubation the only means was to introduce the finger for the introduction and to see if the tube was in position, but its greatest value was in diseases of the nasopharynx in children. Anæsthesia should be employed in an operation for adenoids, and the forceps, the curette, and the finger nail be used. He showed a specimen of adenoids which he had removed two weeks before. The child had had a fœtid rhinitis. The trouble had existed for three weeks, and the speaker examined the patient for adenoids. He felt a peculiar body in the nasopharynx, which, on being removed, proved to be the peel of an apple, calcified, measuring about four by two inches. After removing that, he had put the patient under the influence of chloroform and removed the adenoids. The presence of this foreign body in the nasopharynx of so small a child, and its long retention, made this case unique and interesting.

Dr. Kohn said he was aware there was in the paper nothing new to a specialist. His object had been to impress the importance of a digital examination on the general practitioner. He did not wish to have it take the place of instruments. Less pain was caused the child by the introduction of a finger than by the use of instruments, and in adenoids the finger gave much information that was indispensable to an operation. Regarding the use of anæsthetics, he believed a much more perfect operation could be done under chloroform anæsthesia, but in dispensary practice it was almost impossible. The method he had described was very rapid and effective.

New Inventions, etc.

A PILE FORCEPS AND HYSTERECTOMY CLAMP.

By Jarvis S. Wight, M. D.,
BROOKLYN.

It is important to have a forceps or clamp that will hold a mass of piles so that no portion of pile seized can possibly escape. After various experiments I have found the instrument invented by me, and represented in the accompanying cut, competent to perform this work.

The ordinary serrations are made on both jaws of the forceps. In one jaw there is a fenestra or slot into which shut a distinct row of oblique teeth formed somewhat like

those of a saw. These teeth are oblique in the direction of the ends of the forceps jaws. I have found in actual practice that these jaws will hold securely every portion of the tissues which they lay hold of, and that the obliquity of the special teeth permits the withdrawal of the forceps upon slightly opening the jaws. The security of hold and the facility of removal are special features of this useful instrument.

Various forms of this instrument are made for me by George Tiemann & Co.

Miscellany.

The Treatment of Ordinary Forms of Eczema.—The *Presse médicale* for December 7th publishes an article on this subject by M. J. Barozzi, who considers the local, the internal,

and the dietetic treatment of this affection. In the local treatment of acute eczema, he says, in the first stage, emollient applications are indicated in order to cleanse the surface and free it of crusts; for this a poultice of potato starch is recommended by M. Besnier. After this sterilized tarlatan saturated in cold boiled water is applied and covered with a layer of impermeable silk. This, perhaps, says the author, is the best means of dressing an eczematous eruption while the skin is red and oozing, although the following solutions may be employed instead: 1. Resorcin, 38 grains; boiled water, 31 ounces. 2. Phenosalyl, 15 grains; boiled water, 22 ounces. 3. Ichthyol, 15 grains; boiled water, 16 ounces.

In the second stage, says M. Barozzi, powders and ointments may be used, but, if the least intolerance is shown, the moist applications must again be resorted to. In the third stage, when the irritation has disappeared, powders and greasy substances may be used. In a great number of cases it is sufficient to cover the surface with equal parts of talc, starch, and zinc oxide. More frequently ointments are employed, the most efficacious of which are as follows: 1. Equal parts of zinc oxide and vaseline, with a sufficient quantity of sweet-almond oil to make the mass of the proper consistence. 2. Zinc oxide and starch, each, 375 grains; salicylic acid, from 8 to 30 grains; vaseline, 750 grains. 3. Salicylic acid, from 8 to 30 grains; zinc oxide and starch, each, 360 grains; lanolin, from 450 to 600 grains; vaseline, from 300 to 450 grains.

When eczema attacks the face it is often of great advantage to substitute spraying with cold boiled water for the poultice, using it for half an hour at a time, covering the face with compresses of oiled silk afterward. When the eruption is thoroughly generalized applications of perfectly fresh lard are very beneficial; but many patients are benefited by applications of Carron oil or glycerole of starch with neutral glycerin; after the application of the latter, it is well to powder the parts with starch. In acute eczema which is rebellious to moist applications or to poultices dry applications must be resorted to after the parts have been cleansed. The following mixtures may be used: 1. Equal parts of salicylic acid, starch, and bismuth subnitrate. 2. Equal parts of lycopodium and starch, or simply pulverized starch. The crusts must be detached every day with the aid of lotions or by spraying the parts.

With regard to chronic eczema, says the author, the most incongruous topical applications may give good results. At first it is important to institute an emollient treatment, in order to make the crusts fall off and to prepare the parts for the application of the curative substances. As soon as the surface is cleansed the following formulas may be used: 1. Tannin, 30 grains; calomel, 15 grains; glycerole of starch, 450 grains. 2. White zinc oxide, 150 grains; salicylic acid, 8 grains; vaseline, 300 grains. Unfortunately, says M. Barozzi, in a great number of cases these mild ointments do not give any results, and more energetic means must be resorted to, such as fifteen grains of tartaric acid combined with three hundred grains of glycerole of starch. This is a good preparation, which, however, may be replaced by the following: Salicylic acid, 15 grains; balsam of Peru, 75 grains; tincture of benzoin, from 15 to 30 grains; vaseline, 600 grains. In case of failure more energetic remedies may be tried, and for this purpose the following are recommended: 1. Oil of cade, 15 grains; glycerole of starch, 600 grains. 2. Beta-naphthol, from 30 to 75 grains; vaseline, 750 grains. 3. Tar, from 15 to 75 grains; vaseline, 750 grains. 4. Guaiacol, from 15 to 75 grains; vaseline, 3 ounces. This ointment, says M. Barozzi, allays the pruritus quite rapidly and it should be tried in rebellious cases. When all these means have failed the following solution is recommended: Silver nitrate, from 15 to 45 grains; distilled water, 450 grains. This solution is very efficacious, but it must be carefully used, and, if it produces irritation, emollients must again be employed. Finally, the following remedy should also be tried: Chrysophanic acid, 15 grains; purified gutta percha, 15 grains; chloroform, 150 grains. This is to be applied with a brush and allowed to dry on the affected parts.

Physicians, says the author, should not hesitate to employ more energetic means, but only after other measures have failed. It is essential to begin with gentle, harmless remedies, and to watch the reaction of the skin when it has been necessary to use topical irritants.

With regard to the general treatment, he says, a distinction should be made between arthritic, strumous, and neuropathic eczema. In the first class of cases alkaline waters may be prescribed, which may be replaced by sodium bicarbonate in doses of from fifteen to thirty grains a day. In arthritic persons, if there are very marked tendencies of an arteriosclerotic nature, the employment of potassium iodide is often followed by good results. M. Barozzi recommends the following formula: Potassium iodide, 300 grains; syrup of bitter-orange peel, 9 ounces. From one to two dessertspoonfuls of this mixture are to be taken just before eating. It is important to bear in mind, he says, that iodides should not be employed except during the intervals between the eruptive attacks and when the stomach is in a condition to tolerate them. For the attacks, when they are very intense, M. Brocq recommended the following pills: Quinine hydrobromide, 0·8 of a grain; extract of belladonna, 0·015 of a grain; extract of gentian, 0·8 of a grain. From four to five of these pills may be taken every day for ten days.

In cases of scrofulous eczema cod-liver oil, iron iodide, and arsenic should be employed. The oil is very efficacious when it is taken in sufficiently large doses, at least three tablespoonfuls a day. The iron iodide, in doses of from 0·8 to 1·6 of a grain, also gives good results, but, if the stomach does not tolerate it, the treatment must be stopped. With regard to arsenic, says the author, M. Brocq advises its careful employment in small doses, from 0·015 to 0·045 of a grain of sodium arseniate. This, however, he says, is far from being useful in all forms of eczema; it is efficacious enough in chronic eczema, but it is scarcely to be recommended for the acute form of the disease.

In the treatment of neuropathic eczema opium and the bromides should generally be avoided; even chloral is not always harmless, but the preparations of valerian are excellent. The following formulas may be administered: 1. Tincture of valerian, 300 grains; sulphuric ether, 150 grains; orange-flower water, 3 ounces; julep, 4 ounces. From one to two dessertspoonfuls a day of this mixture may be taken, half at night and half in the morning. 2. Extract of valerian, 3·2 of a grain; asafœtida 0·8 of a grain; extract of gentian; a sufficient quantity to make a pill. From five to ten pills a day are to be taken.

It is very important, says M. Barozzi, to watch the digestive functions and the action of the kidneys in all forms of eczema. The diet also is very important, and in the majority of cases proper food is the most efficacious internal remedy for eczema. A judicious, well-regulated diet has often given more favorable results than topical applications. Alcoholic drinks are generally fatal to recovery from any form of eczema, and in certain cases their use must be given up entirely. Patients who are not susceptible may drink wine diluted with pure water or with an alkaline water. Liquors ar

seldom harmless, and it is better not to use them at all. Very strong coffee and tea are also contraindicated, although patients with very slightly irritable lesions may drink both tea and coffee if they are made in very weak infusion and taken but two or three times a week. White meats only should be eaten; beef and mutton are not to be recommended. All highly spiced, salt, and fatty foods are to be avoided, also salads and preserves. Peas, spinach, and green beans may be permitted, but tomatoes, sorrel, asparagus, water-cress, cabbage, cauliflower, and cucumbers are forbidden. Lima beans, potatoes, and lentils seem to have no influence. Such fruits as strawberries, raspberries, apples, pears, melons, and even figs and raisins are to be avoided. The fruits with large pits, such as peaches, apricots, cherries, etc., may be eaten. Eggs and a milk diet are indicated. The latter is of the greatest benefit, although it should not be given to patients whose skin is particularly irritable. All strong and fermented cheeses are contraindicated, but the white cheeses and Swiss cheese may be eaten. In general, all acids must be avoided; it is the same with fatty substances, although in some persons they do not seem to produce sufficiently unfavorable results to warrant their exclusion from the diet. It is very important, says M. Barozzi, to follow this course of diet as long as possible after the lesions have disappeared.

Infectious Hæmorrhages.—In an article on this subject, published in the *Journal des praticiens* for December 7th, the writer remarks that, if the affections which may produce hæmorrhage are extremely varied, the anatomical changes which explain this production are rather constant. Among the different infectious lesions which seem to have the most influence in producing hæmorrhages are changes in the blood, in the capillaries, and in the liver.

The blood, says the writer, offers a special morbid condition which Vulpian and Millard have very clearly summed up under the name dissolved blood. Its plasticity and its capability of coagulation are weak; it seems that the red blood-corpuscles are dissolved in the serum. The blood stains the fingers, leaving a mark like sepia, and this characteristic, which was noted by Millard in malignant diphtheria, is found in many other grave infections. This dilution, this absence of coagulation of the blood, explains the production and persistency of the hæmorrhages. It may be conceived that in pneumonia, where the quantity of fibrin in the blood is considerably increased, hæmorrhages are rare, even in cases of general infection. In cholera and in miliaria the considerable loss of liquid by profuse diarrhœa and by sweating renders the blood thick and viscous. When hæmorrhages supervene they have a particularly grave prognostic significance.

The blood-vessels may be attacked with microbian embolism, and it is especially near the capillaries and about the vasa vasorum that these are produced. The result is thrombosis, which is singularly favorable to the production of vascular ruptures above the obliteration. The walls of the blood-vessels, says the writer, even in diseases where the infectious agent does not penetrate into the blood, may become altered under the influence of the toxines, and their coats become thickened, which is a fresh cause of thrombosis. But, at the same time, they become infiltrated with embryonic cells and leucocytes. The endothelium undergoes fatty degeneration. To these different lesions may be added the influence that the toxines often exert upon the vaso-motor nerves, causing contraction or dilatation of the blood-vessels to an excessive degree.

These changes of the blood-vessels do not occur without producing lesions in all the organs. From the special point of view of infectious hæmorrhages, the lesions of the liver seem to have a predominating influence. The principal characteristics of infectious disease of the liver are as follows: The liver may be attacked by direct microbian lesions, such as congestion, exudation, and suppuration; but the infectious-lesion type is acute yellow atrophy with erosion, degeneration, and necrosis of the hepatic cells. The liver is soft, flabby, and friable, and on cutting into it no blood or bile runs out. Under the microscope the hepatic cells, which are atrophied and affected with steatosis, are scarcely recognizable. The liver contains an abundance of leucine and tyrosine, which perhaps contribute their part to the dissolution of the blood.

From a therapeutic point of view, says the writer, these lesions are important. They explain the inefficacy which, in certain cases, the most active medicaments show. In hæmorrhages from vascular degeneration what effect, asks the author, can ergotine have on these friable walls? In affections such as diphtheria and malarial poisoning the antitoxic serum and quinine sulphate may act in the beginning because they are true specifics; but in many other affections we have to be contented with simple palliatives. Inhalations of oxygen seem useful in order to produce the maximum activity of the red blood-corpuscles, which are considerably reduced in number. Furthermore, it seems to favor the amœboid and phagocytic action of the leucocytes. Quinine sulphate, cinchona, and the vegetable and mineral acids are employed. Werthof gives the following potion in hæmorrhagic purpura: Diluted sulphuric acid, 75 grains, and syrup, 450 grains, in a decoction of cinchona bark (150 grains in 6 ounces of water). Transfusion of blood, says the writer, when it has been tried, has rarely been followed by distinct results.

The New York Academy of Medicine.—At the last general meeting, on Thursday, January 2d, the order for the evening was to be a paper entitled Infantile Intussusception; a Study of One Hundred and Three Cases Treated either by Intestinal Distention or by Laparotomy, by Dr. Frederick Holme Wiggin.

At the next meeting of the Section in Public Health, on Friday evening, the 10th inst., the subject of the milk supply of New York will be considered in the following papers: The Present Status of the Milk Supply, by Dr. George B. Fowler; Methods for the Prevention of the Sale of Adulterated Milk in New York, by Dr. Edward W. Martin and Dr. Ernest J. Lederle; Remarks on the Significance of Micro-organisms in Milk, by Dr. Rowland G. Freeman; and The Results of Certifying Milk, by Dr. Henry M. Coit, of Newark.

Military Hygiene.—The *Journal of the American Medical Association* for December 21st publishes a lecture on this subject by Major Charles Smart, of the Army Medical School, Washington, of which the following is the substance: The duties of an army surgeon, says the author, are various: they require him to be a many-sided specialist. When a soldier becomes sick the army medical officer has to treat him as his attending physician; when accidents or injuries occur he has to be prepared for the emergency as an operative surgeon, but at all times he has to watch over the health and strength of the command as its sanitary or health officer. In this last respect his duties do not differ materially from those of the health commissioner of a municipality. The health officer of a city has to guard the community against the introduction of infectious diseases by a system of quarantine or of careful inspection. If any infectious disease, such as small-pox, scarlet fever, measles, diphtheria, cholera, or yellow fever, should make its appearance in the city notwithstanding his precau-

tions, he must endeavor to prevent its spread by isolation, disinfection, and other special means, meanwhile determining, if possible, its derivation and the measures to be adopted to prevent the occurrence of other cases from the same source. He has likewise to guard the city against any outbreak of disease from local insanitary conditions, or, in other words, to see that all nuisances are abated. He has to look after the wholesomeness of meat, milk, and vegetables and the condition of various articles of food as to purity or adulteration. He has to keep guard over the water supply, whether general from the city reservoir or local from wells or springs, and to provide for the satisfactory removal of offal, garbage, waste water, and night soil. Lastly, he is responsible for the accuracy of the vital statistics of the community. To enable him to perform these various duties he has the assistance of a staff of expert employees, including sanitary, police, and plumbing inspectors, bacteriologists, analysts, and statisticians.

The army medical officer, says the author, has similar responsibilities, but he has no such staff; he must be prepared to undertake by himself any or all of these duties as the occasion may require. Hence the necessity on his part of a more intimate knowledge of the methods of practical hygiene than is usually conveyed in the curriculum of a medical college.

It is only in recent years that the status of the army medical officer as a health officer has been officially recognized. It is true that in the early years of the republic he was charged by the *Regulations* to do everything in his power to eradicate contagion: but this meant only contagion in the hospitals, the contagion of hospital gangrene and of the deadly typhus fever, and gave him no power over the general well-being of the troops. The *Regulations* of 1828 provided that when troops were in quarters the surgeon should from time to time inspect the rooms and kitchens, the quality and preparation of the food, and the location and condition of the vaults, and report defects and suggest improvements to the commanding officer, who was directed to take such action as seemed to him necessary and proper. The surgeons did this honestly and faithfully, inspecting and recommending until they became tired of making recommendations that were never carried into effect, for the commanding officers of those days seldom considered it needful or proper to take any action, but instead often regarded the medical officer as officious and meddlesome, and his report and recommendations as reflections on their administration. For many years the regulation was, therefore, a dead letter; but in progress of time the popularization of sanitary science became such that military commanders began to have a better appreciation of sanitary recommendations, and as a result we have now vastly improved conditions and lessened rates of sickness and mortality. At the present time most military officers are as interested in the sanitary condition of their men as the medical officers themselves are. The duties of the military health officer do not differ materially from those of the civilian officer; they are both based on the same principles.

Two diseases, says the author, which affected humanity from the earliest periods had much influence in stimulating a practical interest in preventive medicine. To leprosy, he says, we owe our present hospital system, and to the plague our system of quarantine and maritime sanitation, although it is to cholera and to yellow fever that we owe the improved methods of the present day. The registration of vital statistics and the institution of boards of health are also two most important agencies in the modern progress of practical hygiene, and in the United States many cities and a few of the States have excellent systems, but, he says, taken as a whole, this country is far behind in the registration of vital statistics. This is not so, however, with the United States Army, for army medical officers report all cases of sickness as well as deaths, and it is this which gives so much value to the statistical reports of the surgeon general.

The protection of the coast line against the importation of cholera, yellow fever, small-pox, etc., says Dr. Smart, is also a subject on which there must be either a perfect co-operation among local authorities or a federal supervision, for an efficient quarantine at one seaport is of no value to a country if the disease effects a landing in consequence of the inefficiency of the service at another port. There are also many questions concerning protection from indigenous diseases, such as consumption, typhoid fever, etc., which are of interest to all the States. For these reasons, he says, most of the medical and sanitary men of this country are anxious to see a national board of health established. At present the Marine-Hospital Service conducts the duties of maritime quarantine, but it does not fulfill the purposes of a federal board on questions of internal sanitation. Medical men and sanitarians are therefore as earnest, he says, at the present time as they were in 1871 in their efforts to secure national health legislation, and there seems some prospect that this country may soon have a central or federal sanitary bureau.

Dr. Smart states that he has given the foregoing sketch on hygiene and sanitation in order that we may be better able to appreciate the relations of military hygiene to public hygiene; for, he says, the army medical officer in time of peace has usually a civilian settlement attached to his station for which he must act as health officer, and in time of war the sanitary interests of large sections of the country may devolve upon him.

The Diagnosis and Treatment of Early Cancer and Cysts of the Breast.—At a recent meeting of the Medical Society of London, a report of which appears in the *Lancet* for December 14th, Mr. Bryant read a paper on this subject. He said he had been induced to write it on account of a series of cases of cystic disease of the breast, most of which had been diagnosticated as being cancerous tumors, having recently passed under his notice; and he was convinced that such errors of diagnosis might be diminished by care and thought. He admitted that typical examples of cancer as well as of adeno-sarcoma were usually readily recognized, and that difficulties of diagnosis, and consequently uncertainty of treatment, chiefly occurred when any or many deviations from the typical examples were met with. He divided his cases, in which difficulties of diagnosis were liable to occur, into the three following groups, the divisions being based on clinical symptoms alone: Group 1 included cases in which either in a young, middle-aged, or even old married or unmarried woman there was some enlargement or thickening of one lobe of a mammary gland, without any external evidence of wrong, either in the integument covering the affected lobe of the breast, the nipple, or the lymphatic glands. Group 2 comprised cases in which there was a distinct and very evident lump, the size of a nut or walnut, shelled or unshelled, and inseparable from the breast gland, with some of the local conditions generally accepted as being indicative of a cancerous tumor, such as a flattened or retracted nipple, with or without an enlarged lymphatic axillary gland. Group 3 included cases in which, in the middle-aged woman past childbearing, the breast gland feels to be generally, or in one or more of its lobes, harder than natural, coarse or knotty, the knots varying in size from small to large peas or nuts, and where there might be at times, with or without the applica

tion of pressure upon the gland, some discharge from the nipple of either a clear yellow or blood-stained fluid, or some cheesy pultaceous material, associated or otherwise with an enlargement of some lymphatic glands. The author took up each group separately and pointed out the questions which came before the surgeon with reference to diagnosis and treatment. In Group 1 the main question to decide, he said, was whether the local lump or induration was an early cancerous tumor or a cyst, or, if in any way connected with lactation, a chronic abscess. If probabilities pointed to its being cancerous in its nature he showed how important it was to have the diagnosis clear and the local disease removed; for such a measure, when undertaken at the very earliest stage of incipient infiltration, was far more likely to be followed by a permanent cure than when performed at any later stage. For this purpose he advocated in these cases an early exploratory incision as a preliminary measure to an excision of the growth and gland should the diagnosis of carcinoma be verified. He said he had followed this practice for many years and with the best results. In Group 2, in which there was a distinct tumor present and the question for diagnosis lay between a local cancer and a cyst, Mr. Bryant pointed out the wisdom of the question of cyst always having a first place in the surgeon's mind, for he believed it was from a neglect of this habit of thought that so many mistakes in diagnosis were met with. He drew attention to certain methods of examination which facilitated diagnosis, and to the value of different objective symptoms which might be present in the different cases. He illustrated this group, with its treatment, by giving brief notes of many interesting examples, and pointed out that these cases had mostly occurred in women after forty years of age. The disappearance of cysts by time and treatment was then discussed and illustrated by cases, but Mr. Bryant stated that such cases as these were not common, and gave no support to a practice which allowed the local trouble to continue without treatment. He believed that cases of reputed disappearance of adeno-sarcomata and of cancer were examples of mistaken diagnosis, and in reality were cysts. He had never known a tumor which was solid to disappear without surgical assistance. The reappearance of cysts which had been said to have disappeared spontaneously years before was also pointed out, and the remark made and illustrated that in one case the re-enlargement of the cyst might be genuine, and that in another the cysts might be of the proliferating kind. The third group was finally considered and the clinical features of the cases included in it carefully described. Such cases, he said, were too often regarded as being cancerous. The points for diagnosis were emphasized, and the subject illustrated by three cases worthy of study. He expressed his belief that in the three groups of cases to which he had drawn attention his hearers would be able to find a place for most, if not all, the doubtful and difficult cases which would come before them, and he felt assured that if they would carry to the bedside the thoughts and methods of investigation to which he had drawn their attention, their difficulties—which had been his difficulties—would be found to lessen, if not disappear, and that at any rate a working diagnosis could be arrived at in most of the cases upon which a sound treatment could be based, and that of drifting avoided, to the advantage of the patient and the credit of the profession.

Mr. Marmaduke Sheild said that the subject of the diagnosis of these cases was one of great interest and importance. Surgeons who possessed the accumulated experience of a large number of years were the only ones to speak on this subject with confidence. Mr. Bryant had used the term adeno-sarcoma to describe some of these cases, and to the speaker's mind no cases were more difficult to diagnosticate than sarcoma of the breast. Many cases classified after microscopical examination as adenoma had recurred and were ultimately classed as sarcoma. As to the treatment of chronic indurations of the breast, he asked, were large doses of liquor potassæ to be recommended, or the internal administration of mercury and iodide of potassium with local strapping? From his own observations he was convinced that a certain number of these cases were syphilitic. He had seen cysts of the breast with such thick walls and so greatly distended with fluid that neither elasticity nor fluctuation could be recognized; such swellings had frequently been removed for cancer. The difficulty about the exploratory incision was the formation of a scar upon the breast, and he inquired if tapping with a fine trocar and injection with iodine would not suffice to cure some of the simple cysts. He had met with a case in a woman aged forty who had a hard lump in her breast. He had explored it with a large trocar and cannula and had found nothing. He had then removed the breast, when he found a very thick-walled cyst containing puttylike material, no doubt a galactocele of ancient date.

Mr. Turner related the case of a woman who had suffered from sarcoma of the thyreoid gland. He had done a low tracheotomy and the growth had almost disappeared. It had grown again and then once more had shriveled up. She had died from some other affection and at the autopsy the diagnosis of sarcoma had been confirmed. Mr. L. Bidwell stated that in two cases of cysts which he had seen simple aspiration had been employed and been followed by recovery. In cases of tumor of the breast with retracted nipple, he said, it was often difficult to decide whether they were carcinomatous or inflammatory, and the character of the fluid evacuated by the nipple on pressure over the breast was not always a trustworthy guide as to the nature of the affection.

Mr. Bryant, speaking of adeno-sarcoma, said that these growths occurred in younger women than those who were the subjects of cancer. Nearly all the cases of cysts, he said, had been brought to him by medical men as malignant growths, and for this reason he had found it politic to advise an exploratory incision rather than tapping. He was quite convinced that it was false to assert that the majority of cysts of the breast in middle-aged women were associated with cancer or were likely to become so, and it was wrong to lead these patients to believe that such breasts would probably become the seat of cancer. Cases of involution cysts in women who were middle-aged, or prematurely so, should be carefully watched. The character of the fluid evacuated from a cyst was certainly of value in many cases as an aid to diagnosis. The author's rule had been to treat simple serous cysts by plugging; in other cases of cyst, especially when associated with intracystic growth, he had dissected out; where the cysts had been multiple he had removed the lobe or the whole gland. He had seen but one dermoid cyst of the breast, but had met with many sebaceous cysts. A simple cyst, he said, if it gave rise to no trouble, might be left alone; no treatment was of use to cause absorption. He had seen no good result from tapping; on the contrary, harm had followed, although, being of a septic nature, this might probably be avoided at the present time. The scar which resulted from exploration was usually insignificant, and where the diagnosis was in doubt between cyst and cancer, he said, the patient would readily submit to incision.

The Chemical and Physiological Changes in Milk caused by Boiling.—In the *British Medical Journal* for December

14th Dr. J. L. Kerr remarks that there is reason for supposing that when fresh milk is ingested the living cells are at once absorbed without any process of digestion, and enter the blood stream and are utilized in building up the tissues. The casein of the milk is digested in the usual way of other albuminoids by the gastric juice, and absorbed as peptone. There is also absorption of serum albumin by osmosis.

The chemical result of boiling milk is to kill all the living cells, and to coagulate all the albuminoid constituents. Milk after boiling is thicker than it was before.

The physiological results are that all the constituents of the milk must be digested before it can be absorbed into the system; therefore there is a distinct loss of utility in the milk, because the living cells of fresh milk do not enter into the circulation direct as living protoplasm, and build up the tissues direct, as they would do in fresh unboiled milk.

In practice, he says, it will have been noticed by most medical practitioners that there is a very distinctly appreciable lowered vitality in infants which are fed on boiled milk. The process of absorption is more delayed, and the quantity of milk required is distinctly larger for the same amount of growth and nourishment of the child than is the case when fresh milk is used.

Three Cases of Stramonium Poisoning, with Recovery.—In the *Indian Medical Record* for November 16th Mohommud Kabirul Hasun, of the Pisangan Dispensary at Rajputana, relates the following cases: 1. The patient was a healthy laboring man, thirty years old. His ideas were confused and the power of speech was gone. The pupils were dilated and the conjunctivæ were bloodshot. His face was red and the pulse feeble; there was involuntary motion of the body and he could not walk properly. The other usual symptoms of *datura* poisoning were present, although not very severe. 2. In this case, says the author, the patient was a woman, twenty-seven years old, whose condition and symptoms were the same as in the preceding case, but very severe; she also kept picking up imaginary straws from the ground. 3. The third case was that of a child, three years old, who exhibited the same condition and symptoms, but in a less severe form. The author's treatment was as follows: He gave an emetic of zinc sulphate, and after a short interval he had cold water dashed continually on the patients' heads and faces, keeping them in the open air during the treatment, which lasted from two to four hours, at the end of which time they had recovered. The pupils were normal, the pulse was regular, and the power of speech had returned. All involuntary motion of the body and all bad symptoms had disappeared.

Ichthyol in the Treatment of Burns.—The *Semaine médicale* for November 13th publishes an article on this subject by M. L. Leistikow, of Hamburg, an abstract of which appears in the *Revue internationale de médecine et de chirurgie pratiques* for December 10th. The writer states that the author's experience with this drug for a period of six years has shown that, of the numerous means recommended for the treatment of burns, ichthyol is the best and the most practical. It allays the pain and causes the disappearance of the congestion as well as of the œdema of the skin, not only in burns of the first degree, but also in those of the second degree, provided that all the blisters have been previously opened. In the latter case the regeneration of the epidermis begins very soon under the influence of the ichthyol; at the same time desquamation is produced, or any eschars which may exist fall off. For burns of the first degree M. Leistikow employs the following mixture: Zinc oxide, 75 grains; magnesium carbonate, 150 grains; ichthyol, from 15 to 30 grains. For burns of the second degree he uses the following paste: Zinc oxide, 75 grains; prepared chalk, powdered starch, linseed oil, and limewater, each, 150 grains; ichthyol, from 15 to 45 grains. The applications of powder and paste are renewed every twenty-four hours. In cases where the inflammatory symptoms are very intense the powder and the paste may be combined as follows with good results: The burned parts are covered with the powder, over which a layer of the paste is applied.

Ophthalmic Troubles in Bicyclists.—In the December number of the *Medical Chronicle* there is an abstract of an article on this subject by M. de Lavigerie, published in the *Recueil d'ophthalmologie*, No. 4, 1895, in which the following case is related:

Mr. B., a professional cyclist, was engaged on the 2d of February in a twenty-four-hours' track race at the *Velodrome d'hiver*, at five o'clock in the afternoon of an intensely cold day. He mounted his machine "feeling perfectly fit and in the best of form." During the night the thermometer fell to 10° or 12° in still air. Mr. B., however, had the services of relays of pacemakers on tandems, who, traveling at high speed in front of him, made a vacuum in the air behind them, producing a rapid current of air so strong as to carry round the track in the wake of the machines pieces of crumpled paper and other light articles. Under these conditions, then, and worked up to a high state of nervous tension in his attempt to break the record, the patient passed the night. After three quarters of an hour's racing he began to complain of seeing colored halos round the electric lights; disregarding this, he still kept on, though his vision gradually became more indistinct. By the morning his acuteness of vision was so much affected that he could hardly tell whether the incandescent lamps were burning or not, and by half-past ten o'clock he was observed to steer wildly and come in collision with persons on the track. On inquiry, he announced that he was quite blind, and was immediately made to dismount, having ridden for eighteen hours and covered the distance of five hundred and thirty-six kilometres. On an examination of his eyes, the lashes and conjunctival *culs-de-sac* were found covered with dust. There was very little circumcorneal injection, but both corneæ were hazy and infiltrated, the zone of infiltration corresponding to the palpebral opening, and having a fan-shaped expansion downward. There was no exfoliation of the epithelium, but the infiltration appeared to be situated deep in the corneæ. The peripheral visual field and color perception were normal, but direct vision was reduced to distinguishing fingers at twelve feet. A warm boric-acid lotion to the eyes and quiet rest in bed for several hours, as he was suffering greatly from cold and fatigue, promptly improved his condition, and in forty-eight hours his corneæ had become transparent once more, and vision had become fully restored. The interesting features in this case, says the writer, are the development of symmetrical trophical lesions on both corneæ in a probably overtrained, neurotic individual, subjected to intense muscular fatigue in the presence of a very low temperature, and the rapid recovery from the corneal opacity, which may be said to have lasted only a few hours before it began to clear up.

The Mary Thompson Hospital for Women and Children, of Chicago.—Dr. Marie J. Mergler, professor of gynæcology and clinical gynæcology in the Northwestern University Woman's Medical School, has been appointed gynæcologist and head physician and surgeon to fill the vacancy caused by the death of Dr. Mary Harris Thompson. In memory of

the valued services of the deceased physician the name of the hospital has been changed from the Chicago Hospital for Women and Children to the one that forms the heading of this article. The hospital extends the privilege of bringing patients from all parts of the country and *retaining the care of them* to physicians in good standing other than members of the medical staff. Dr. Mergler holds the position of gynæcologist to the Wesley Hospital and the Post-graduate school, and is also surgeon to the Woman's Hospital of Chicago.

Somatose in Diseases of the Gastro-intestinal Tract.—In the *Dtsch. Aerzt.-Zeitung* for October 15th Dr. Gerdes and Dr. Susewind state that they have found somatose of special utility in irritation of the gastro-intestinal mucous membrane. As an illustration of its value they cite a case of severe gastro-enteritis in which all other liquid foods given in larger quantities had been vomited, while the employment of a strong solution of somatose (a heaping teaspoonful to three tablespoonfuls of water) not only tided the patient over a critical period of fourteen days, but exerted a very favorable influence upon his strength. Although the somatose solution was administered, at first three times, then four or five times daily, for a period of fourteen days, the patient never manifested repugnance, and even during the stage of convalescence relished its addition to soups or other foods. As an addition to the ordinary diet of anæmic and nervous persons it proved of great value, being well borne and perfectly assimilated for a long time. In the cases observed by the authors an increase of strength occurred within a comparatively short time, and in chlorosis a rapid disappearance of the menstrual disturbances, headache, vertigo, etc., was noted. In some instances after the use of somatose a remarkable improvement took place in the digestion, and all the patients experienced an increase of appetite which persisted after the discontinuance of its use. In the above-mentioned solution somatose, in the authors' opinion, seems pre-eminently indicated as a nutriment in cancer of the stomach and œsophagus, where only small quantities of food can be ingested, or after gastrostomy, since its ready assimilability precludes the occurrence of digestive disturbances.

The Medical News.—It is announced that Dr. J. Riddle Goffe, of New York, is now the editor of the *News*. The retiring editor, Dr. George M. Gould, of Philadelphia, said the following brief farewell in the issue for December 28th:

"In severing relations with his contributors and collaborators the retiring editor deeply regrets the necessity of doing so, because whatever of unpleasantness and labor the office may have brought to him it has been the means of bringing a much larger share of things good beyond valuing —the friendship and sympathy, for example, of many noble men, and a clearer comprehension of the real dignity and loyalty of the great medical profession. There may be added the satisfaction of the consciousness of having striven faithfully to administer the trust for the benefit of scientific and ethical medicine. Hundreds of cordial letters received attest a certain measure of success in realizing this ideal, and no reply can adequately express the sense of gratitude felt for numberless courtesies and kindnesses spontaneously extended."

Enormous Doses of Bismuth Subnitrate.—At a recent meeting of the *Société médicale des hôpitaux*, a report of which is published in the *Mercredi médical* for December 11th, M. A. Mathieu related the case of a patient who suffered from an excess of hydrochloric acid in the secretions of the stomach. He had prescribed bismuth subnitrate in doses of two hundred and twenty-five grains in the morning and seventy-five grains at night. Besides this the patient had taken half a milligramme of atropine sulphate. This treatment had been continued during the physician's absence, which had lasted for about sixty days. In that time the patient had taken altogether twenty-four thousand grains of bismuth subnitrate. This enormous quantity, said the author, had not produced any alteration in the general condition. The patient had had for a long time stomatitis and streaks on the gums, which did not seem to have been aggravated by the bismuth. There had been no slate-colored patches on the inner surface of the cheeks, but there had been a pigmentation resembling that which occurred in pregnancy; this, however, had disappeared after the treatment had been stopped. Constipation had also been observed, but it had been only incidental, and the digestive functions had not been perceptibly changed.

M. Hayem remarked that this observation confirmed what he had previously stated on the subject of the internal use of bismuth subnitrate. In large doses, he said, it was a good medicament in the painful forms of dyspepsia, decidedly preferable to sodium bicarbonate.

A Scientific Archæological Curiosity.—The *Progrès médical* for December 7th publishes a letter from M. Folet, of Lille, in which he remarks that, without wishing to throw doubt on the originality and the merit of M. Debierre's and M. Gérard's recent researches on the existence of direct arterio-venous anastomoses, etc., he would like to recall a scientific archæological curiosity in regard to this subject. These arterio-venous anastomoses, he says, were pointed out without any direct demonstration or exact description by Riolan, who attributed their discovery to Galen. The majority of authors speak of Riolan's *Encheiridium anatomicum* without having read it, and that is the reason why Riolan has been accused of being one of the most systematically obstinate opponents of the theory of the circulation. The truth is, says the writer, that Riolan's theory of the general circulation was an extremely curious and mixed one, and may be summed up as follows: There are blood-vessels in which the blood circulates, the aorta and the vena cava. The blood takes a centrifugal course in the large artery, the aorta, and a centripetal course in the large vein, the vena cava. But in the medium or small blood-vessels, arterial or venous, the blood is stagnant, or has a sort of slow backward and forward motion in order to nourish the tissues which it washes. The excess of the arterial wave—and here, says the writer, may be seen the coincidence between Riolan's theory and the facts pointed out by M. Debierre—passes from the large-sized artery, where it travels toward the periphery, into the large-sized vein, where it returns to the centre through the anastomoses which exist between the arteries and the veins of the limbs. The existence of these anastomoses can not be denied, he says, for Galen demonstrated it and daily experience confirms it. Again, Riolan wrote: "The veins have this peculiarity, that, in the limbs, they manifestly communicate with the arteries. Galen proved it, and it is so clear that we should not question it."

The writer states that he has referred to the chapter in Galen's work indicated by Riolan, and that he has found nothing in regard to the subject, but in the preceding chapter he has found the following incidental passage: "The arteries which are brought together by several points with veins. . . ." Riolan, then, says M. Folet, was much more explicit and exact than Galen, whose authority he invoked. The writer states that he has called attention to the foregoing passages only because of the curious coincidence.

Case I.—Hypertrophic pulmonary osteo-arthropathy.

Case II.—Hypertrophic pulmonary osteo-arthropathy.

Case II.—Hypertrophic pulmonary osteo-arthropathy.

Hand of osteo-arthropathy (Case II) and acromegaly (Case IV). Shows particularly well the affection of the bones of the forearm in the one (Case II), and its absence in Case IV.

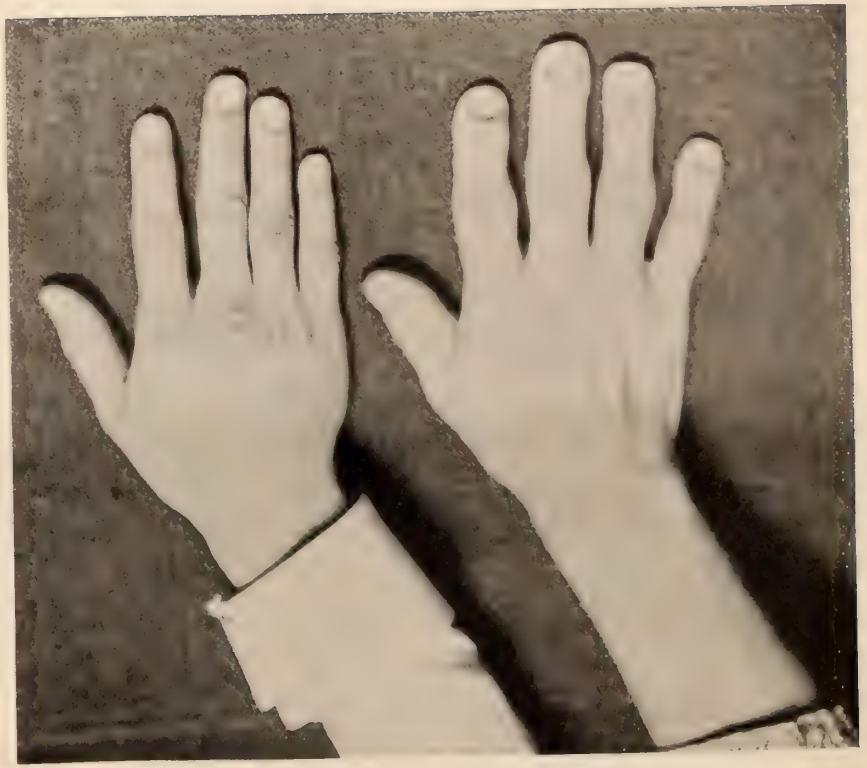
Hand in Case II (hypertrophic pulmonary osteo-arthropathy) beside that of a robust individual of the same stature (0·5 ctm. taller).

Case III.—Hypertrophic pulmonary osteo-arthropathy.

Case III.—Hypertrophic pulmonary osteo-arthropathy.

Case IV.—Acromegaly, 1893.

Case IV.—Acromegaly, 1895. Shows the deep furrows in the palms.



Hand of acromegaly (Case IV) alongside that of a robust woman of the same stature. The broad, spadelike hand of acromegaly is well shown.

Original Communications.

HYPERTROPHIC PULMONARY OSTEO-ARTHROPATHY AND ACROMEGALY.

A CLINICAL LECTURE,
WITH THE HISTORIES AND PHOTOGRAPHS OF FOUR CASES.

By WILLIAM SYDNEY THAYER, M. D.,
ASSOCIATE IN MEDICINE AT THE JOHNS HOPKINS UNIVERSITY;
FIRST ASSISTANT IN THE MEDICAL CLINIC AT THE JOHNS HOPKINS HOSPITAL.

In 1889 Bamberger demonstrated before the Wiener medicinische Gesellschaft two cases of bronchiectasis with clubbed fingers and painful enlargements of the ends of certain long bones. He noted that this condition was not extremely rare, and suggested its dependence upon the absorption of certain substances from the putrefying bronchial secretion.

In 1891 * he added five more cases of bronchiectasis with similar changes, as well as four cases of cardiac disease with more or less similar disturbances. In the cardiac cases, however, the changes in the long bones were scarcely as marked. In five of these instances the autopsy showed well-marked periostitis ossificans in the affected parts of the long bones. In discussing the cause of these changes, he mentions the fact that Wagner produced similar processes in hens by feeding them with phosphorus. He experimented with rectal injections of putrefying bronchial secretion in rabbits, but was unable to obtain any positive results. He speaks guardedly as to the cause of these changes, noting the frequency with which one (clubbed fingers) may exist without the other (periostitis of the ends of the long bones), and suggests that possibly several causes may be at work.

In the mean time, in 1890, Marie,† quite ignorant of Bamberger's observations, reported a similar case and, reviewing the literature of acromegaly, became convinced that a certain number of cases had been included in this list which did not properly belong there. The majority of these cases presented features closely similar to those reported by Bamberger. Only in those instances where the changes had reached an excessive degree had the condition been confounded with acromegaly. These advanced cases showed, first, in contradistinction to the condition of things in acromegaly, very few changes in the face; the nose, skin of the face, lips, orbital ridges, and lower jaw were practically unaffected. In some instances a certain degree of thickening of the alveolar border of the upper jaw had been described.

Secondly, the almost constant cervical kyphosis of acromegaly was wanting. When present in these cases it was more usually seen in the lower dorsal or lumbar regions.

Thirdly, the hands and feet in this condition may be enormous, but the affection differs in many ways from that occurring in acromegaly. The hand in acromegaly is unusually large, short, and plump. There is great thickening of the skin and soft parts, and deepening of the furrows of the palm. In this other condition the hand may also be enormous, but it is distinctly deformed. The most striking point is, perhaps, the enlargement of the terminal phalanges, which are usually characteristically club-shaped, like drumsticks. The carpal and metacarpal regions, on the other hand, are but little affected, while at the wrist the bones are again unusually large.

Fourthly, the nails in acromegaly appear small owing to the general broadening and thickening of the fingers. In this other condition they are usually large, and show a marked incurvation, sometimes resembling a parrot's beak. They also show the characteristic pinkish coloration; they are typical "Hippocratic" fingers.

Fifthly, the long bones of the forearm and of the leg in acromegaly are but little changed, or more or less symmetrically thickened, while in these other instances there is a most striking increase in the size of the bones toward the epiphyses, more particularly at the distal extremities.

In considering eight cases of this affection which he had gathered together, it was noted that in two there existed a purulent pleurisy, in two a pulmonary neoplasm, in three bronchitis.

Marie considered the process to be purely secondary—secondary probably to the pulmonary affection—and to be sharply distinguished from acromegaly, which forms a well-marked disease by itself. He thus summarizes his theories concerning the cause of these changes: "A lesion of the respiratory apparatus permitting probably, under the influence of micro-organisms, of the production at this spot, o putrid or fermenting substances (bronchitis, purulent pleurisy, with or without the operation for empyema); secondly, the absorption and passage into the general circulation of these substances produced in the respiratory apparatus; thirdly, the elective action of these substances on certain parts of the bones and of the articulations, determining the lesions of hypertrophic osteo-arthropathy. This last possibility presents certainly nothing unreasonable, if one only recalls the precision with which, by a wholly analogous process (nonparasitic), gout, thanks to the presence of uric acid in the blood, attacks always, or almost always, the same points in the osteo-fibrous system."

Since this time a considerable number of cases similar to those originally collected by Bamberger and Marie have been reported. A majority have been associated with pulmonary lesions of one sort or another, though fairly characteristic cases have been reported in other conditions—cardiac diseases, syphilis, in two instances of which no pulmonary or cardiac lesion was found. In several instances autopsies have been made, revealing the dependence of the thickening of the long bones upon a periostitis ossificans, resulting sometimes in a more or less symmetrical thickening and condensation of the bone, and again in the formation of osteophytes. In one instance an increase of the synovial fluid with erosion of the cartilages was noted in several joints.

Thorburn * reported three cases, all of which were asso-

* *Zeitschr. für klin. Med.*, xviii, 193.

† *Bull. méd.*, 1889; *Revue de méd.*, Paris, 1890, x, 1.

* *British Med. Journal*, 1893, i, 1155.

ciated with pulmonary tuberculosis, and suggests, from a consideration of the cases which have come to autopsy, that the process is actually of a tuberculous nature, but "of a benign type, having no tendency to break down and caseate." He suggests the name "tubercular polyarthritis" as a fitting one for the process.

Two cases of this condition have been reported in this country, those of Packard* and of Davis.† A consideration of the cases which have been reported can leave but little doubt in the mind of the observer that Marie was justified in drawing a sharp line between this process and acromegaly. It appears to be essentially a secondary process, occurring in most instances after chronic pulmonary disorders. In the simplest cases it is represented by marked clubbing of the finger tips, associated with subjective symptoms of slight tenderness about the epiphyses of the long bones, particularly the distal extremities of the bones of the forearm and of the leg, while at autopsy a slight periostitis is to be made out in these regions. In the more advanced cases the enlargement of the lower ends of the bones of the forearm and of the leg may be extreme, as well as the increase in size of the terminal phalanges, and indeed of the fingers as a whole. It is only in this condition that the process is to be compared in any way with acromegaly, and even at this time the relatively slight affection of the soft parts, the entire absence of many of the common subjective symptoms of acromegaly—headache, nervous symptoms, evidences of tumor of the hypophysis—leave but little chance for error in diagnosis. The autopsy in these instances has never shown tumor of the hypophysis, which is so common in acromegaly. The true cause of the process is really a matter of great doubt. While almost invariably secondary to some other condition—usually pulmonary or cardiac disease—there are cases which show evidences of a very early development of the symptoms. The evidence is certainly quite insufficient to justify Thorburn's suggestion that the process is always of a tuberculous origin. The term proposed by Marie—hypertrophic pulmonary osteo-arthropathy—has been quite generally accepted, though it would probably be safer were it possible to adopt the more conservative suggestion of Arnold—secondary hyperplastic osteitis.

The course of the process appears to be extremely slow, having of itself little influence upon the progress of the primary disease. In several instances partial or complete recovery has been reported; in one instance under syphilitic treatment, in another after draining of an empyema, in another after drainage of a tuberculous cavity. The relation of this group of symptoms to ordinary Hippocratic fingers is interesting. Clubbed fingers exist in almost all of these instances, but they may also be present in their most characteristic form in a very considerable number of pulmonary and cardiac affections where no involvement of the long bones is to be made out. Whether the same cause is at work in both instances, the one condition being simply a more advanced grade of the other, can not be definitely stated. It is certainly true that the most exquisite Hippocratic fingers may exist entirely alone, while again, in some cases of well marked hypertrophic pulmonary osteo-arthropathy, the clubbing of the terminal phalanges may be by no means as characteristic. I wish to show you to-day a well-marked case of hypertrophic pulmonary osteo arthropathy, with the photographs, casts, and histories of two other cases, and to compare them with this other patient, the case of acromegaly which you have already seen.

If you will compare now the photographs of the woman (Case I) and those of Case III with the patient whom we have here (Case II), you will be struck by the similarity between the large hands, the long fingers, the clubbed finger tips, the large nails, and particularly with the similarity between the condition of the ends of the long bones at the wrists and ankles. In each instance you will see the striking expansion of the lower ends of the tibia and fibula. You will also note that the face is practically unaffected. If you take the skin of the face or of the most affected parts of the hands or feet of this man between your fingers, you will find that it is as delicate and as easily movable as your own. If you examine the palms of his hands, you will find that they are smooth, and that there is no deepening of the furrows. In Case II you will also find a marked thickening of the distal extremities of the metacarpal and metatarsal bones.

On examining the casts of the hands and the photographs of Case III you will be struck by the great enlargement of the ends of the long bones, particularly at the wrists and ankles. But you will notice here that not only is the same enlargement marked at the distal extremities of the metacarpal and metatarsal bones, a point on which no stress has been laid by other authors, but also about the articulations between the first and second phalanges, as well as at the knee joint. The same clubbing of the finger tips with incurvation of the large nails is to be made out. The marked lengthening of the fingers is not noticeable in this case, and on a superficial glance at the palm the hand presents a more spadelike appearance than is usually seen in this condition. If you examine the cast you may readily see that there is no thickening of the skin and no deepening of the normal furrows. There is, as you will see from the photograph, no change in the bones or soft parts of the head or face.

Comparing these three cases with this woman with acromegaly, the difference in the whole picture can not but strike you. The great increase in the size of the nose and lips, the thick hanging folds of the face, the broad, flat, spadelike hands, with the deep furrows in the palms, the extreme thickening of the skin in all the affected parts, the entire absence of any deformity of the long bones, form a striking contrast to Cases I, II, and III, and this contrast becomes much more evident when one considers the clinical history of the case. In Cases I, II, and III the changes in the hands and feet have come on apparently secondarily to a pulmonary affection. Thus, in one case they followed apparently a general bronchitis with pleurisy

* *Am. Journal of the Med. Sciences*, June, 1892, ciii, 657.

† *Journal of the Am. Med. Assoc.*, June, 1895, xxiv, 845 (with literature).

with effusion, while in the two others a chronic pleurisy (empyema) occurred. In one of these instances there was bronchiectasis with fœtid expectoration. The discomfort suffered by these patients has been disproportionately small in comparison to the visible changes; it was in the first patient almost wanting; in the two other cases it was present only as a moderate tenderness at times over the ends of the long bones, with transient effusion into the knee joints.

In Case IV the condition began in a perfectly healthy woman without any apparent cause. From the onset it has been associated with the most distressing and excruciating headaches, aching, "tearing" pains in the extremities, in the jaw, and in the tongue, with grave vaso-motor disturbances, profuse sweating, frequent vomiting, and great thirst.

In the first three instances the process is undoubtedly a purely secondary affair—the hypertrophic pulmonary osteo-arthropathy of Marie; the secondary hyperplastic osteitis of Arnold. The third case is a primary progressive disease—the acromegaly of Marie.

Therapeutically, little can be done beyond treatment directed toward the alleviation of the primary process—the empyema, bronchiectasis, cardiac disease. The only instances in which much hope may be held out are apparently those associated with syphilis. It may, however, be said that the process may exist for years with relatively little discomfort to the patient. In acromegaly also we are equally, indeed more, helpless; and after two years of palliative treatment we have been compelled in the case of patient No. 4 to resort finally to injections of morphine to relieve the continuous and excruciating pains. Even with this the patient is but little relieved. Owing to the existence of the goître in this case, treatment with extract of the thyreoid gland was carried on for about two months without beneficial effect.

Case I.—Stella M., married, twenty-eight years of age, native of Poland, was admitted to the Johns Hopkins Hospital on the 12th of July, 1892. She complained of cough, pain in the region of the heart, and swelling of the legs.

Her father died at fifty of unknown cause; patient remembers that his legs were swollen; mother is alive and healthy at seventy; no brothers; two sisters living and healthy, one thirty-six and the other forty years old. There s no history of tuberculosis or of cancer in the family.

The patient speaks only Polish, so that a very satisfactory history was not obtained. She says, however, that at the age of ten, while carrying wood, she "strained herself," and was sick in bed with abdominal pains for eight weeks; otherwise she had always been strong and well, and while in Poland she had worked in the fields. She came to this country two years before admission. She said that she had fever on board the ship. She had been in this city ever since her arrival in the country. The catamenia appeared at the age of nineteen; had four children; no miscarriages. Last child was born four years ago. Her last catamenia occurred fourteen weeks ago. Patient says that about fifteen weeks ago she "caught cold," and ever since then has had considerable cough and expectoration. Has never had any hæmoptysis. Some shortness of breath; no palpitation. The appetite is fair; the bowels are regular. She says that her legs have always been fat, but about six weeks ago she noticed for the first time that her ankles were getting thicker, and this has progressed, she thinks, ever since then. There is some pain in the legs on walking. She is said to have lost sixty or seventy pounds in weight. She has had night sweats and does not sleep well on account of the cough; no headaches.

On the 13th of July the note was as follows: In bed on her back; rather sparely nourished; skin of a muddy color; peculiarly expressionless countenance; bridge of the nose rather broad; lines of the face not sharp; eyes rather heavy. The ends of the fingers, particularly on the right side, are clubbed and a trifle expanded. There is some incurvation of the nails.

Thorax.—The right side of the chest seems to move more than the left on inspiration. There is marked dullness in the lower left front, becoming flat at the fifth rib in the recumbent posture and at the fourth rib in the erect posture about midway between the mammary and anterior axillary lines. At the apex the resonance is more tympanitic and higher pitched than on the right side. The right side of the back moves materially more than the left; resonance throughout the right back is good. On the left side flatness begins at the spine, at about the origin of the ninth rib, extending upward to slightly above the angle of the scapula. In the right front the respiration is clear. On the left side respiration is enfeebled and of a somewhat tubular modification at the apex, accompanied by medium, fine, and coarse moist râles. Passing downward in the second and third spaces the râles become more numerous and somewhat coarser. On passing into the flat area the respiratory sounds become feeble and distant; vocal fremitus absent; voice sounds far away. In the back, respiration is clear throughout the right side. Above the spine of the left scapula respiration is enfeebled; fine, moist râles are heard at the end of inspiration, while below in the flat area vocal fremitus is absent; vocal resonance and respiration feeble and distant.

Heart.—Cardiac dullness is continuous with that of the effusion. There is well-marked heaving over the fifth, sixth, and seventh costal cartilages, but the exact point of maximum impulse is hard to determine. Dullness extends fully two finger-breadths to the right of the sternum in the fourth interspace. Sounds are heard loudest in the fifth interspace about two finger-breadths from the margin of the sternum; they are clear and of normal relative intensity. *Hepatic* flatness begins at the sixth interspace in the mammary line; the border can be felt three finger-breadths below the costal margin. *Splenic* flatness is continuous with that of the effusion. A sharp border is to be felt low down in the splenic region, possibly muscular, but resembling more the spleen.

The abdomen is very flaccid, bulging markedly between the separated recti; negative on palpation. Nothing remarkable about the hands or arms beyond the clubbing of the finger tips and the incurving of the nails. The feet and legs are, however, much enlarged; the tibiæ at the upper end are about normal in size. As one reaches the lower third on each side there is a great expansion, particularly on the right side. At the level of the malleoli both tibiæ are very thick and heavy. The feet themselves are not so remarkably large considering the development of the patient. There is no œdema of the extremities and there are no marked glandular enlargements. Patient has a distressing cough with considerable thick, greenish muco-purulent expectoration. No tubercle bacilli were found in the sputum on repeated examinations. The *urine* was normal in color, cloudy, 1·017, acid in reaction, trace of albumin, no sugar, no diazo reaction; microscopically, epithelium and leucocytes; no casts seen.

On the 21st of the month, nine days after entry, the lungs were almost entirely clear. A slight dullness at the left base with enfeebled respiration was still present. The adventitious sounds had wholly cleared up, and the patient was discharged at her own request. Since this time it has, unfortunately, been impossible to follow the further history of the case.

Case II.—H. H., aged twenty years, presented himself at the out-patient department of the Johns Hopkins Hospital on the 13th of March, 1893, complaining of pain in the right chest and of cough.

Family History.—Father and mother living and healthy; three brothers and one sister living and well; one brother died from the effects of some throat trouble, having been ill for two years previous to his death. No other distinct history of tuberculosis in the family.

Personal History.—As a child he had measles and chicken-pox; since then has always been quite healthy. There is no history of typhoid fever, rheumatism, pneumonia, pleurisy, or malarial fever. He smokes and drinks moderately; denies venereal disease.

Present Illness.—Seven weeks ago, after exposure to inclement weather, the patient was seized with a chill, which was followed by fever and a severe cough. He was in bed three weeks, the doctor telling him that he had pneumonia. Since that time, off and on, he has had intermittent chills, fever, and sweating, with occasional pain in the right chest. The appetite is fair; bowels regular; no nausea or headache.

Physical Examination.—The patient is thin, pale, and looks ill; lips and mucous membranes are pale; tongue clean; pulse full, soft, thirty to the quarter; temperature, 100·2° F. Examination showed evidence of a pleural effusion upon the right side, which, from the symptoms, was believed to be purulent, and the patient was advised to enter the hospital. He did not, however, appear, and was next seen two years later, on the 18th of March, 1895, when he applied for admission to the hospital, complaining of cough, spitting of blood, and pain in the right side.

The patient states that after the consultation at the dispensary in 1893 the cough had steadily persisted. Often, however, for several days in succession it would be quite slight, while upon the third or fourth day he would have a sudden spell of coughing, and in five minutes would expectorate as much as a pint of thick, yellow sputum. This condition has existed throughout the last year or more. On Wednesday, March 13th, the patient had an attack of hæmoptysis, and on the 14th expectorated about "three pints" of bright red blood. This has continued daily since, the quantities, however, greatly diminishing. He has been in the habit of leaning toward his right side and pressing the hand against the right side of his chest to get relief from pain. Nine months ago he first noticed that his spine was becoming "crooked." For two weeks the patient has had pain below the right scapula. He sweats a good deal at night; says he does not think he has lost in weight. For two months the patient has complained of not being able to grasp small objects firmly, owing to his inability to close the hand tightly. He has never suffered any pains in his hands or feet. For four months he has had occasional pain in his knees when he attempted to kneel down; it gives him the sensation of pins sticking into him. He states, on questioning, that his mother has told him that his hands were enlarged ever since he was a child, but that he had never had difficulty in getting stockings or shoes to fit him. Within the last six months, however, he has noticed that it was impossible to lace his boots, and he has noted the increase in the size of the wrists and ankles.

On the next day I saw the patient and made the following note: The patient is in bed on his back. He is tall—six feet and two inches in height. The frame is otherwise not remarkably large. The lips and mucous membranes are distinctly pale; tongue clean. The face is symmetrically formed; no thickening of the lips, no prognathus, no marked thickening of the upper or lower jaw, no apparent enlargement of the nose or supraorbital ridges. As the patient lies in bed there is a very marked contraction of the upper part of the right chest, the right shoulder being considerably lower than the left. Slight scoliosis in the upper dorsal region with convexity toward the left. One is immediately impressed with the remarkable size of the hands as compared with the rest of the frame. The muscular development of the arms is rather slight, but the hands are extremely large. On further examination it is to be noted that the lower extremities of the long bones of the arm, especially on the left side, are quite markedly enlarged, the expansion just above the wrist on the left side being considerable. The hands, particularly the left, show interesting changes. The carpal region does not appear to be particularly changed. The metacarpal bones, however, are universally thickened, especially at their distal extremities. The first metacarpal bone on the left side is extremely large at the distal extremity, though this characteristic is apparent upon both sides. The fingers are long and massive; the phalanges feel large, but show by no means a proportionate enlargement to that of the metacarpal bones on the left side. The ends of the last phalanges are markedly enlarged. They are somewhat club-shaped and are held in a position of super-extension. The finger nails are large, well formed, and smooth, but show a quite marked incurvation similar to that seen in the clubbed fingers of tuberculosis. The appearance of the hands as a whole is quite characteristic of the cases classified by Marie as hypertrophic pulmonary osteo-arthropathy.

The clavicles appear natural; nothing remarkable about the humerus on either side.

The legs present a remarkable appearance. The feet are rather large and heavy, but what is particularly striking is the great thickening of the lower third of the tibia and fibula. The tibiæ on either side at their upper extremities are of normal size in proportion to the general development of the individual. Below the junction of the lower and middle thirds they become remarkably large, and at their lower extremities, just about the ankle joints, the thickening is extraordinary. The feet do not seem to be particularly enlarged in the tarsal region. The metatarsal bones are not as much enlarged relatively as the metacarpals. The metatarsal bone for the little toe on the right side feels, however, considerably thickened. The toes are somewhat massive and slightly clubbed. The lower end of either femur seems also to be disproportionately thickened.

Thorax.—Marked flattening in the upper right chest; expansion nearly absent on the right side. Resonance throughout the left front is good. On the right there is a dull tympany at the apex; flatness beginning in the recumbent posture in the third space; no movable dullness. The point of maximum cardiac impulse is in the fifth space, about three centimetres outside the mamillary line. Vocal fremitus in the lower right chest is very slight, but yet to be felt; at the apex it is increased. Respiration clear throughout the left front and axilla. In the resonant area at the right apex the respiration is clear, though it is enfeebled, while the expiration is somewhat prolonged. Passing downward into the

dull area, the respiratory sounds are almost absent and the voice sounds a trifle nasal. In the right back there is flatness up to a point about five centimetres above the angle of the scapula; vocal fremitus almost absent. Throughout the left back the resonance is clear and also the respiration. In the upper right back the respiration is feeble and distant; in the flat area it is almost absent; a few distant, dry, crackling sounds only are to be heard. In the interscapular region, at the upper border of dullness, there is a suggestive creaking sound rather like a friction rub, as well as a few moist râles. The right breast is rather prominent and tender, and the gland is very distinctly felt.

Heart.—Point of maximum cardiac impulse three centimetres outside of the mamillary line; relative dullness in the third space, extends obliquely outward to the point of maximal impulse. The first sound is dull and thudding, followed by a soft systolic murmur, which is lost in the mid-axilla. The murmur grows much louder at the base, and is of particular intensity in the aortic area and over the manubrium, also in the carotids. The second pulmonic is somewhat accentuated. The pulse is of rather small volume, but of fairly good tension.

Abdomen.—Border of the liver not palpable, possibly owing to the tenseness of the abdominal wall. On percussion, dullness extends four centimetres below the costal margin in the mamillary line; in the median line, six to seven centimetres. The spleen is not palpable; flatness begins apparently at the eighth rib, extends about to the tenth; it does not pass the costo-articular line. The abdomen is otherwise negative; no marked glandular enlargement. The left epitrochlear and one or two cervical glands may be felt.

An exploratory aspiration was made in the eighth space in the right back, and only one drop of clear fluid removed. The needle passed through an almost cartilage-like pleura.

Urine normal, clear, yellow; specific gravity, 1·020; faint trace of albumin, no sugar, diazo reaction absent, a slight white flocculent precipitate. Microscopically, a few hyaline and granular casts; occasional leucocytes and epithelial cells; crystals of oxalate of calcium.

Sputum thick and tenacious, purulent, containing a considerable quantity of blood in streaks and mixed with some small nummular masses; no special odor. Microscopical examination showed red blood and pus cells, a fair number of alveolar cells, a few diplococci, no tubercle bacilli.

Blood.—Red corpuscles, 5,464,000; white, 3,000; hæmoglobin, forty-eight per cent.

The patient showed no fever, and rapidly improved in his general condition. There was, however, considerable cough, which was more marked in the morning, and accompanied by a profuse muco-purulent expectoration, the blood rapidly disappearing.

On the 9th of April the patient complained of pain in the right chest. Examination showed a well-marked friction rub. The chest was strapped, with great relief to the patient. Repeated examinations of the thick, muco-purulent greenish expectoration showed no tubercle bacilli. The sputum was measured daily, ranging between five and one hundred and thirty cubic centimetres in the twenty-four hours, the amount upon the whole diminishing.

On the 16th of May the following note was made: Patient has gained altogether three pounds in weight. The color has improved and he feels better. There is no pain in the left side. Physical examination almost exactly as on the former entry. The median cephalic vein in the right arm is thickened; it is quite distinctly to be felt and can be rolled under the finger; occasionally a vein in both forearms can be felt.

At his own request the patient is discharged.

He returned to the hospital on the 10th of June, complaining of severe pain on the right side, following a sharp chill several days before. On examination the patient was found to be more emaciated than on last entry, paler, tongue red and clean. The right side of the chest showed almost exactly the same signs as on the last entry, flatness beginning at the upper border of the fourth rib and not changing with change of position. The sternal ends of the clavicles appear rather large as compared with the other parts of the bone. No tubercle bacilli are found in the sputa, which is closely similar to that at the last entry.

The patient remained in the hospital a little over a month, the temperature showing at first a slight elevation, but falling after four or five days to normal. The sputa were at first very abundant and at times of a very foul odor. On the 14th, 15th, and 18th of June there were four hundred cubic centimetres. The amount, however, rapidly diminished, and was under thirty cubic centimetres at the time of his discharge. The patient weighed a hundred and forty-six pounds on entry, and remained at the same weight at the time of his discharge on the 29th of July.

He returned again on the 5th of August, complaining of the same symptoms, the temperature being slightly elevated. Under rest and iodide of potassium he improved, however, rapidly. The quantity of sputum diminished steadily.

August 20th.—Temperature has been normal now for several days; expectoration muco-purulent, fairly abundant. Appearance of chest much as on last note. There is marked flattening of the right front, which expands but little on inspiration. Auscultation and percussion just as on last entry. Point of maximum impulse thirteen centimetres from median line. At the right base behind there is a slight scratching sound with inspiration, suggesting a friction rub.

During the months of September and October the patient has complained of considerable tenderness over the ends of the long bones of the legs and arms, and for about a week during October there was a marked increase of fluid in both knee joints. This was associated with little tenderness and disappeared on bandaging and rest in bed for several days. There appears, as measurements show, to be a slight steady increase in the size of the hands and feet, as well as of the lower ends of the long bones of the arms and legs.

Careful measurements were made on July 28th and on November 5th with the following results: Height, 183 centimetres; November 5th, 183·5 centimetres.

In standing erect with hands close to the side, the tips of the fingers of right hand extend to a point nine centimetres above the level of the upper margin of the patella; the fingers of left hand to a point 12·3 centimetres above the level of the upper margin of the patella; a difference probably accounted for by depression of the right shoulder. On November 5th the left hand was 12·5 centimetres above the upper margin of the patella.

	JULY.		SEPTEMBER.	
	Right.	Left.	Right.	Left.
	Ctm.	Ctm.	Ctm.	Ctm.
Upper Extremity.				
Tip of acromion to tip of middle finger	85·1	86·3	86·0	86·5
Tip of olecranon to tip of styloid process of ulna	29·0	29·0	31·0	30·5
Circumference of lower end of the forearm 1 ctm. above tip of styloid process	18·0	18·0	18·75	18·75
Circumference of mid-carpal region	17·5	17·0	19·0	19·75

	JULY.		NOVEMBER.	
	Right.	Left.	Right.	Left.
	Ctm.	Ctm.	Ctm.	Ctm.
Length of metacarpal bones:				
First metacarpal	5·0	5·5	6·0	5·75
Second "	7·5	7·5	8·5	8·25
Third "	7·5	7·2	8·5	8·25
Fourth "	7·2	6·5	7·5	7·5
Fifth "	6·3	5·5	6·3	6·0
Circumference at broadest part of metacarpus	....	....	26·5	26·5
Length of fingers from base of first phalanx to tip:				
Thumb	6·5	7·0	7·5	7·0
Index finger	11·0	10·6	11·0	10·5
Middle "	12·0	11·5	12·0	11·5
Ring "	11·3	11·5	11·5	11·6
Little "	8·5	8·9	9·0	9·0
Circumference of fingers at base of second phalanx:				
Thumb	7·0	7·1	7·75	7·75
Index finger	7·0	7·0	7·5	7·5
Middle "	7·3	7·0	8·0	8·0
Ring "	7·2	6·8	7·75	7·5
Little "	6·2	6·0	7·0	6·75
Lower Extremity.				
Distance from tip of greater trochanter to level of sole of foot	102·5	103·5	103·75	104·5
Circumference of knee at the middle of the patella	36·5	35·0	36·5	36·0
Length of tibia from articulation at knee to tip of internal malleolus	45·0	45·0	46·0	45·0
Circumference of leg 7 ctm. below lower margin of patella	29·5	29·5	30·5	30·0
Circumference of calf, widest part, 18 ctm. below patella	33·0	33·0	34·0	33·75
Circumference of leg 8 ctm. above tip of external malleolus	26·0	25·8	27·0	26·0
Circumference at level of external malleolus; foot at right angle to leg	31·0	31·5	32·75	32·25
Circumference at instep, tape passing over the tip of heel	35·5	36·0	36·25	36·0
Length of foot	28·5	28·5	28·5	29·5
Length of femur from tip of great trochanter to articulation between femur and tibia	....	....	47·0	47·0
Length of toes from metatarso-phalangeal joints to tips of toes:				
Big toe	....	....	7·0	7·0
Second toe	....	....	6·0	6·0
Third "	....	....	5·5	5·25
Fourth "	....	....	5·0	5·0
Fifth "	....	....	4·5	4·5
Circumference of terminal phalanx of the great toe at its thickest point	....	....	10·5	10·5

Case III.—L. A. K., aged thirty-one years, farmer, was admitted to the Johns Hopkins Hospital on September 27, 1895, complaining of cough, weakness, pain in the right side of the chest, and enlargement and soreness of the bones of the wrists, hands, ankles, and feet.

Family History.—Father died of paralysis at fifty-three. Mother died in childbirth. One brother died of influenza and one in infancy. Three brothers and one sister living and healthy. No history of pulmonary tuberculosis in any branch of the family. No history of any nervous trouble or of any condition similar to that from which he now suffers.

Personal History.—Measles, mumps, and whooping-cough when a child. No history of chorea, scarlet fever, or rheumatism. As a child had a "low fever," keeping him in bed six or eight weeks (typhoid ?). Has never had malarial fever. Denies venereal infection. Has led a very regular life, never drinking to excess.

Present Illness.—Up to January, 1890, the patient was in good health. At this time he was confined to his bed for four or five weeks with pneumonia. A few days after leaving his bed he had a severe attack of left-sided pleurisy, which again confined him to bed for about two weeks. By this time the acute pain in the side had diminished, but the patient states that he suffered intensely with a general soreness throughout the chest. Three weeks later, in a paroxysm of coughing, he suddenly felt as though he "had a rotten egg in the mouth," and expectorated a considerable quantity of pus, which he was told came from an abscess which had developed in the left lung. For about three days the cough was continuous day and night, fully a quart and a half of pus being "raised." The cough then ceased quite suddenly, and for the next two years the patient considered himself in good health and free from cough. In October, 1892, the patient began to complain of weakness and lassitude and took to bed. Three days later he again had a sudden attack of coughing, the sensation of a rotten egg in his throat, and the expectoration of a considerable quantity of pus. In a day and a half he thinks he coughed up a pint of pus. For the next two months, though the cough was not very severe, he was unable to do any work. Soon after beginning work in January, 1893—shipping oranges from his grove in Florida—the cough returned, and in the latter part of March he was compelled to take to his bed again for two or three weeks. There was severe cough with profuse expectoration. The patient states that at this time he was much prostrated. In May he went to the Lithia Springs in Georgia. From March, 1894, to April, 1995, the patient was in Tucson, Arizona. Since May of this year he has been under the care of Dr. Trudeau, at Saranac Lake, N. Y. To the kindness of Dr. Trudeau we owe the opportunity of observing the case.

During the summer of 1894 the patient noticed from time to time a stiffness in his knees and a peculiar chilly feeling in the calves of his legs. In October or November, 1894, he first began to notice that his insteps were getting longer and he had to change his shoes for a larger size. In December, 1894, he began to notice an enlargement of the ends of his fingers, and in January, 1895, of his wrists. The enlargement of the wrists was associated with considerable pain of a dull character, which was aggravated by movement.

This pain ceased entirely after two months. At the same time the patient began to notice a painless increase in the size of the ankles. In June, 1895, the knuckles were first noticed to be swelling, and the metacarpo-phalangeal joints also began to enlarge. Since then the patient has had no pain, excepting in the knees, which are very much enlarged.

He has lost much power in his hands and complains of lassitude after slight exertion. In six months he has lost sixteen pounds (143 to 127). There is a dry, hacking cough during the day; at night there is a certain amount of expectoration.

Over a year ago the patient says he had a discharge of pus from the bowels; this was preceded by pain in the left sacral region. Since then these discharges have been frequently repeated, always associated with pain more or less severe in the same region. Dr. Trudeau failed to find tubercle bacilli in this pus. The appetite is good. The bowels are regular—daily movements.

Physical Examination.—The following note was made by Professor Osler on the 27th of September.

The patient looks thin. The chest is well shaped; the clavicles are a little prominent—the right more so than the left. Suprasternal notch marked. Sterno-mastoid muscles prominent. The intercostal spaces are more marked on the right side than on the left. On quiet breathing expansion is good; on deep breathing the left side moves slightly less than the right. The point of maximal cardiac impulse is in the fifth space just below the nipple. From behind the left shoulder

is a little lower than the right, while the dorsal spine is a little curved to the left. Expansion, on deep breathing, is more marked on the right side than on the left, though it is fairly good on the left side. The right scapula is a little winged.

Percussion.—The lungs are clear in front on percussion. Behind, on the right side, the percussion note is good to the angle of the scapula; resonance defective in the outer axillary region. On the left side there is dullness in the lower half of the back, extending into the axillary region, where it begins at the lower border of the sixth rib, becoming flat at the eighth.

Auscultation.—Breath sounds are clear on both sides in the infraclavicular and mamillary regions. In the left axilla, below the fifth rib, the respiration becomes feeble and a few dry, somewhat crackling râles are heard on deep respiration. Behind, at the left base, the respiration is feeble and distant, not tubular. Crackling râles are to be heard.

The abdomen was negative.

The following note was made by Dr. E. P. Carter:

As the patient lies in bed on his back both knees are prominent and enlarged. The lower end of the femur on both sides is considerably increased in size, while, at the same time, the upper ends of the tibiæ seem to be enlarged. There appears to be a little excess of fluid in the right knee joint. The enlargement of the knees contrasts strongly with the development of the thighs.

Both ankles are enlarged, the lower end of the tibia and also, to a slighter extent, of the fibula being involved, together, apparently, with an increase in the size of the bones forming the instep, while the toes on both feet are elongated and markedly clubbed at their ends. This is especially marked in the second and third toes on both feet. The clubbing of the great toes is not so distinctly marked, but they are greatly increased in width. There is slight impairment in the movement of the knees.

Left Hand.—The lower ends of the radius and ulna are markedly enlarged and thickened, though there is no impairment of motion at the wrist joint. The clubbing of the finger tips is very marked, particularly in the index and middle fingers, while the first interphalangeal articulations are also considerably enlarged. The appearance of the hand from the palmar surface is rather spadelike. The nails are large and show a marked incurvation.

Right Hand.—The same enlargement of the lower ends of the radius and ulna is to be noted as on the left side. The same clubbing of the fingers is present, though this is even more marked, particularly in the index, middle, and ring fingers. There is the same enlargement of the first interphalangeal articulation and the same well-marked incurvation of the nails.

Measurements.

	Right.	Left.
Height, 173·8 centimetres.	Ctm.	Ctm.
Upper Extremity.		
Tip of acromion to tip of middle finger	75·0	74·0
Tip of olecranon to tip of styloid process of ulna	57·5	56·6
Standing erect, with hands at side, distance of finger tips from upper margin of the patella	17·8	16·3
Circumference of the lower end of forearm, 1 ctm. above the tip of the styloid process of the ulna	19·0	18·5
Circumference of midcarpal region	19·6	19·6
Length of metacarpal bones:		
First metacarpal	5·4	5·6
Second "	7·7	7·8
Third "	8·0	8·0
Fourth "	7·4	7·5
Fifth "	5·5	5·8
Circumference at broadest point of metacarpus	22·0	21·9
Length of fingers from base of first phalanx to tip:		
Thumb	6·8	6·4
Index finger	9·2	9·8
Middle "	10·0	10·3
Ring "	9·5	9·5
Little "	8·0	7·8
Circumference of finger at base of second phalanx:		
Thumb	7·4	7·6
Index finger	7·5	7·5
Middle "	7·8	7·6
Ring "	7·5	7·3
Little "	6·8	6·6
Lower Extremity.		
Distance from greater trochanter to level of sole of foot	90·5	91·0
Circumference of knee at the middle of the patella	36·2	35·8
Length of tibiæ from articulation at knee to tip of internal malleolus	37·0	37·2
Circumference of leg 7 ctm. below lower margin of patella	30·3	30·0
Circumference of calf, widest part	30·6	30·0
Circumference of leg 8 ctm. above tip of external malleolus	22·0	22·0
Circumference at level of external malleoli (foot at 90° with leg)	27·5	27·0
Circumference at instep, the tape passing over the tip of the heel	36·0	35·0
Length of foot	26·3	26·3
Length of femur from tip of trochanter to articulation between femur and tibia	43·5	44·0
Length of toes from metatarso-phalangeal joints to tips:		
Big toe	6·0	6·0
Second toe	5·6	5·5
Third "	5·0	5·0
Fourth "	4·5	4·6
Fifth "	4·0	4·4
Circumference of terminal phalanx of great toe at thickest point	9·6	9·5

Case IV. *Acromegaly.*—P. S., single, forty-one years of age, was admitted to the Johns Hopkins Hospital on the 30th of March, 1893, complaining of a pain in her head, in the back of her neck, and of dyspnœa. She is a German by birth; a domestic by occupation.

Family History.—Father died of "asthma"; mother died of "heart disease"; two brothers and two sisters living and healthy; two brothers were killed in the war. No history of hereditary disease in the family.

The patient thinks she had the usual children's diseases, and among them diphtheria. About eighteen months ago she was in a hospital in Germany suffering with acute inflammatory rheumatism.

Present Illness.—About ten years ago the patient noticed that the throat was somewhat swollen in front, and that she was somewhat shorter of breath than she used to be. She thinks that the swelling almost disappeared at one time, but for how long she can not remember. The swelling is not painful, but gives her a feeling of oppression at times. Catamenia had always been perfectly regular and painless until two years ago, when they ceased. The patient of her own accord stated that this, the cessation of her menses, was the beginning of her trouble. She began at that time to have pains in her shoulders and the back of the neck shooting up into her head. At first she felt these only occasionally, but for the last few weeks she has had them continuously every evening. She also complains of dull, continuous pains in the back of the neck and in the back of her head. At times, with the sharp attacks of pain, she says there is vomiting. She says that her memory has been getting weaker and that she has been at times very irritable. Since the beginning she has noticed that her hands have been swelling, and her sister

has noticed that her face looks "bloated." The appetite is good; she says that she occasionally has attacks of vomiting after the sharp headache. Bowels are constipated. She complains of considerable "*innerliche Durst.*" Since the beginning of her illness she has complained much of sweating, particularly of the feet.

Physical Examination.—Patient is of rather small stature, but well nourished. The features are remarkably large and coarse. The nose is broad and large, the alæ and sæptum being extremely thick and firm. The skin of the face everywhere is thick, heavy, and leathery, with marked folds about the corners of the mouth and on the forehead. On taking the skin between the hands it is found to be extraordinarily thick and firm. The jaw is massive, but there is no very marked prognathus. The lower teeth project, however, a little beyond the upper. The orbital ridges are rather prominent, as are the malar bones. The ears are not remarkable. The thyreoid gland is markedly enlarged, particularly to the right. On the left the enlargement is not particularly marked. It is soft and almost fluctuating in places. The patient has a very rough, coarse, harsh voice.

Thorax.—Symmetrical; expansion equal. The respiration is rather wheezing in character; expiration somewhat prolonged. Percussion is clear throughout. On auscultation the same wheezing râles are heard which can be heard without the stethoscope externally.

Heart.—Point of maximal impulse in fourth space in about the normal position; sounds are clear, of normal relative intensity.

Abdomen.—Natural; hepatic flatness begins at the seventh rib and extends to the costal margin in the mamillary line. The border is not palpable. The right kidney is just to be felt; spleen not palpable.

The skin of the hands and forearms is thick and heavy. The hands show a remarkable appearance. They are extremely broad and heavy, and spadelike. The fingers are much expanded, the nails appearing rather small in comparison, and showing a well-marked longitudinal striation. The skin over the fingers, and particularly in the palms of the hands, is greatly thickened. The folds in the palms of the hands are remarkably deep and firm (these folds may be seen in the photograph). The enlargement of the hands appears to be general and symmetrical.

The long bones of the arms appear quite unaffected, preserving their relative proportions.

The feet appear rather large; the skin over them is thick and firm, as in the case of the hands, but the increase in size is not as striking. There is nothing remarkable about the bones of the legs. While the examination of the face and hands when the patient was in bed suggested a woman with very large frame, further examination reveals a woman below the medium size.

The *urine* is normal, barring a faint trace of albumin, which disappeared shortly after entry. The *blood* shows nothing remarkable.

The patient has been under observation steadily since this time. She has complained almost continually of very severe headaches, more particularly occipital, but felt in all parts of the head. At times also there have been what the patient calls "tearing" pains in the hands and arms and tongue. There has been always a tendency to very profuse sweating, and the patient has almost always complained of marked thirst. Repeated examinations of the fundus oculi and of the fields of vision have been negative. The patient has left the hospital for short periods at various times, but since her last admission, July 1, 1895, she has suffered more than ever before, complaining continually of the most intense pain in the head, and having had since this time almost daily attacks of nausea and vomiting. At times the vomiting has been continuous and excessive. The pain has been so great that morphine, which at first was avoided, is now administered in doses of 0·13 (two grains), p. r. n. The general appearance during this time has changed but little. There has been, perhaps, a slight increase in the prognathus, while the patient herself has noticed an increase in the spaces between the teeth of the lower jaw. The patient is becoming emaciated and is losing ground rapidly.

Measurements made in May, 1893, and on September 9, 1895, are as follows:

Measurements of P. S.

	SEPTEMBER, 1893.		SEPT. 9, 1895.	
	Right.	Left.	Right.	Left.
	Ctm.	Ctm.	Ctm.	Ctm.
Weight	144½ lbs.		135 lbs.	
Height	.....		156·5 ctm.	
Distance from margin of hair to tip of chin	19·5 ctm.		20·0 "	
Extreme width of face	15·5 "		14·0 "	
From meatus of ear to edge of right nasal orifice	13·7	13.7	13·5	13·5
From meatus of ear to the central point between the eyes	15·2	15·2	13·5	13·5
Breadth of nasal bones between canthi	2·3 ctm.		2·5 ctm.	
Breadth of nose over bridge	5·0 "		3·75 "	
Greatest width of alæ nasi	4·7 "		4·75 "	
Extreme width of mouth	5·3 "		6·0 "	
Breadth of face over nose	18·5 "		.....	
" " " " (measurement by tape from antitragus to antitragus)	.....		33·0 "	
Length of inferior maxilla over symphysis (by tape)	23·3 "		24·0 "	
Thickness of tongue at edge of lip	1·0 "		1·0 "	
Length of ears	6·5	6·5	6·5	6·75
Circumference of neck at hyoid bone	31·2 ctm.		36·5 "	
Trunk.				
Circumference of thorax over nipple	47·4	47·1	47·0	45·5
	94·5		92·5	
Length of each clavicle	15·2	15·3	15·5	14·5
Breadth of clavicles near sternum	2·6	3·0	3·0	3·3
Length of each arm from internal condyle to styloid process	23·4	24·7	25·0	25·0
Circumference at middle of biceps	26·7	27·2	26·0	27·0
Length of each radius	22·5	22·6	23·5	22·5
Greatest circumference of forearm	26·5	26·0	25·5	25·5
Circumference of wrist just below extremity of radius and ulna	18·8	19·0	18·0	18·5
Length of hand from carpo-metacarpal articulation to end of middle finger	17·8	17·2	17·3	16·5
Circumference of metacarpus over right thumb	23·7	23·9	23·0	23·0
Circumference of the hand without the thumb at the head of the metacarpal bones	22·8	23·0	22·0	22·5
Length of middle finger, dorsal aspect	10·8	10·8	10·0	10·0
Length of ring finger	10·4	10·2	9·5	9·8
Circumference of thumb, first phalanx	7·9	8·0	7·5	8·5
Circumference of index finger	8·4	8·5	8·0	8·0
Greatest thickness of hand	4·0	4·0	3·75	3·75
Length of nail, middle finger	1·5	1·4	1·75	1·5
Breadth " " "	1·9	1·9	1·75	1·75
Length of nail of thumb	1·5	1·6	1·75	1·75
Breadth " "	2·1	2·2	2·0	2·3
Lower Extremities.				
Length of thigh	44·0	44·0	42·0	42·0
Circumference of thigh	46·8	47·5	51·0	51·0
Vertical diameter of patella	6·5	6·5	6·0	6·0
Transverse diameter of patella	5·6	5·4	6·5	6·5
Length of leg	38·0	38·0	35·0	36·5
Circumference over knee	37·4	38·8	36·5	36·0
" of middle of calf	33·5	33·0	31·0	30·5

	SEPTEMBER, 1893.		SEPT. 9, 1895.	
	Right.	Left.	Right.	Left.
	Ctm.	Ctm.	Ctm.	Ctm.
Circumference just above internal malleolus	22·8	22·2	22·5	21·5
Greatest circumference of foot (instep)	25·5	25·6	25·5	24·0
Greatest width of foot	10·5	10·25	10·0	9·5
Length of plantar surface of foot	23·5	24·0	23·25	23·0
" " great toe, dorsal aspect	6·6	6·7	6·5	6·5
" " second toe, " "	6·2	6·2	5·75	5·25
" " nail of great toe	1·5	1·6	1·5	1·4
Breadth of nail of " "	2·5	2·4	2·2	2·2

Certain slight differences in these two measurements may be due to their having been made by different men. The diminution in measurements noticeable in many instances in the soft parts is doubtless due to the emaciation, the patient having lost about ten pounds in weight. It may be noted, however, that the length of the lower jaw has increased 0·7 centimetre.

CYST OF THE MAXILLARY SINUS.*

By CHARLES H. KNIGHT, M. D.

In a discussion on the accessory sinuses before the Congress of Physicians and Surgeons in 1894, Bryan, following the usual custom, divided cysts of the antrum into three varieties: (1) Those due to dilatation of a follicle in the mucous lining of the antrum; (2) those resulting from cystic degeneration of a polyp; and (3) dentigerous cysts, internal and external. The last-mentioned, external dentary cysts, are, properly speaking, not antral cysts, since they are primarily developed outside of the maxillary sinus and reach its interior only by eroding and breaking down its bony wall.

Dropsy of the antrum (*hydrops antri*), or an accumulation of non-purulent secretion within the cavity, due to obstruction of the ostium maxillare, is discarded by the majority of modern observers as a separate pathological condition. In the *Revue de laryngologie*, etc., September 1, 1894, p. 786, a case is reported by Délie under the title Dropsy of the Antrum: Nasal Hydrorrhœa. The title would imply that here the ostium maxillare was not closed, whence the inference that serous effusion may take place into the antral cavity while its nasal orifice remains patulous. In his well-known work on *Surgery* (page 596), Fergusson remarks that in some cases the ostium maxillare becomes closed, and the accumulating *mucus* produces enormous distention of the antrum with great disfigurement. He gives a drawing (Fig. 390) which is supposed to illustrate the foregoing condition in which the tumor ruptured during life.

A very animated discussion of this subject was provoked at a meeting of the Paris Surgical Society by a case of antral fistula consecutive to a *dropsy* of the sinus reported by Quenu. He succeeded in closing the fistula by a rather elaborate plastic operation, which was pronounced by Berger to be entirely useless, the difficulty in these cases being not to close but to keep open the artificial passage from the antrum. Berger affirmed that this and similar cases called dropsy were really examples of dentary cyst described by Magitot, and that dropsy of the sinus without suppuration was so rare as to be almost unknown (*Journal of Laryngology*, vol. ii, 1888, p. 278). Watson also, in his work on *Diseases of the Nose* (second edition, 1890, p. 173), condemns the designation "dropsy" as being altogether inappropriate, since it implies a false idea of pathology and ætiology.

Many of the cases reported as hydrops of the antrum are believed to be really cystic formations originating in the mucous membrane. On the other hand, a belief in the existence of a genuine dropsy of the antrum has not been abandoned by all, as appears from a paper in the last volume of the *St. Bartholomew's Hospital Reports* (vol. xxx, 1894, p. 237) by W. J. Walsham. In reviewing the points in differential diagnosis he mentions bulging of the walls of the antrum, prominence of the cheek, protrusion of the eyeball, nasal obstruction, and yielding of the anterior wall of the antrum under pressure in the canine fossa as being "well-known symptoms of *dropsy of the antrum*."

The term is still retained by many others, and probably will remain in our nomenclature to distinguish a watery accumulation in the antrum, of whatever origin, from empyema. Heath, who gives a most satisfactory description of affections of the antrum in his work on *Injuries and Diseases of the Jaws* (p. 168), believes that the name should be discarded, and evidently thinks that all cases reported as hydrops antri were primarily cystic. It would certainly relieve us of much confusion if Heath's suggestion should be adopted.

The frequency of cysts of the antrum is not very great. Luschka, quoted by Heath, found cystic growths in the antrum five times in sixty post-mortem examinations. Heath himself states that no instance of the kind was discovered by Beck in an examination of the antra of thirty subjects. Weber, quoted by Lefferts, in Ashhurst's *International System of Surgery* (vol. v, p. 451), has reported three hundred and seven cases of tumor of the antrum, twenty of which were cystoma. Undoubtedly a cyst may exist for some time without exciting any disturbance. When pressure effects are produced, or the tumor ruptures and its contents escape into the cavity of the antrum and thence reach the nasal fossa, the patient is apt to seek advice.

A study of some of the reported cases is of interest as bearing especially upon the questions of diagnosis and treatment. In the *Medical Chronicle*, July, 1894, two cases are recorded by G. A. Wright which in some features resemble my own. In each of these cases the bony wall of the antrum had been displaced and more or less absorbed, and in each some of the teeth were carious. In one there was a history of traumatism, two incisor teeth having been broken by a fall down stairs six years before. The treatment in each was by incision above the alveolus, where the tumor protruded, a clear watery fluid being drained off. The reporter does not venture to choose between a diag-

* Read before the American Laryngological Association at its seventeenth annual congress.

nosis of dropsy of the antrum and mucous retention cyst, but suggests that either explanation may be possible. In a case reported by Morales (abstract in *Journal of Laryngology*, etc., vol. i, 1887, p. 186) of tumor of the left cheek, the diagnosis of cyst of the maxillary sinus was based upon the escape of seropurulent fluid from a spontaneous opening in the neighborhood of the second molar tooth. The sinus was opened under cocaine along the alveolus and a great quantity of fluid escaped. The cavity was drained and dressed antiseptically, and the patient is said to have been discharged cured in about three weeks.

The diagnosis of these cysts is not always a simple matter. Heath cites Fergusson's case, in which preparations had been made to remove the upper jaw for a supposed solid tumor, which was shown to be fluid by a preliminary explorative puncture (*Lancet*, London, June 29, 1850). The same author refers to a case within his own knowledge, "in which a very able surgeon removed the upper jaw before discovering the error of his diagnosis." A parallel case is reported by Marchant (abstract in *Journal of Laryngology*, etc., vol. iv, 1890, p. 164), in which a dentary cyst simulated a sarcoma and was treated by resection of the superior maxilla. A similar error might readily have occurred in my own case, but for exploration with the needle and translumination, the wall of the tumor being so tense and the mass itself so resistant that many who examined it pronounced it a solid tumor.

Cysts of the antrum may be single, as in several interesting cases described by Adams, who was the first to investigate this subject, or multiple, as in specimens portrayed by Giraldès in his prize thesis (1853). The latter observer found cases in which the tumors were very numerous, the entire mucous lining of the sinus apparently having undergone cystic degeneration.

The history of my own case is as follows:

W. H. C., aged twenty-nine years, clerk, has always had excellent health. Eighteen months ago he first noticed a painless swelling of the gum at the root of the canine tooth of the left upper jaw. It grew steadily without pain or sensitiveness, and the left side of the face became noticeably prominent. The teeth have always been soft and inclined to decay, but never painful or ulcerated. There has never been any nasal stenosis or indication of catarrhal trouble. There is no distinct history of traumatism. The only point recalled by the patient is that in bowling, which he has practised for many years, he has been in the habit of resting the heavy ball against his left cheek. Was the concussion, or possible contusion, thus produced an ætiological factor in the case?

At the time of his first examination the patient complained of nothing whatever, except the obvious deformity caused by the tumor in the left malar region. The mass pushed the upper lip forward, and seemed to reach nearly to the lower margin of the orbit. It extended from the ala nasi across the left side of the face. The skin was unchanged and not adherent. There was no feeling of crepitation or crackling, mentioned by many writers in describing these cases. The sense of fluctuation was so obscure that several who examined it believed it to be a solid tumor. The diagnosis of serous effusion was, however, very beautifully confirmed by the translumination test, and still further by the exploring needle. On raising the upper lip the tumor could be plainly seen protruding in the gingivo-labial fold. The first bicuspid tooth was missing and the second was carious. There was no sensitiveness on percussion or palpation of the alveolus or of the tumor at any point. There was no malformation of the roof of the mouth, and the left nasal fossa was quite normal.

With the expectation of finding a cyst of the antrum, an incision an inch and a half in length was carefully made along the gingivo-labial furrow. What appeared to be a cyst wall was thus exposed. On attempting to dissect out the tumor it was found to be firmly adheren tto the bone, and it was finally ruptured. The lining membrane of the antrum seemed to constitute the cyst wall. A section of the membrane as large as a ten-cent piece was cut away for microscopic examination. It was then discovered that the anterior bony wall of the antrum had been almost entirely absorbed, only a thin shell of bone being left near the nose. Upward of two ounces of thin, slightly turbid fluid were evacuated. Digital examination of the interior of the antrum discovered nothing abnormal. There was no exposed, necrosed, or carious bone, and no polypoid degeneration of the mucous membrane could be detected. On the contrary, the membrane seemed thin and closely attached to the bony walls of the cavity. The root of the second bicuspid tooth projected into the floor of the antrum, but was covered by intact mucous membrane. As its crown was badly decayed it was extracted. A director was passed with some difficulty from the antral cavity into the nasal fossa through the ostium. The cavity, having been washed out, was packed with iodoform gauze, and the lip was replaced, no other dressing being applied. No reaction or disturbance of any kind followed the operation. The gauze plug was removed on the second day and was not renewed. No sign of suppuration occurred. The opening through the alveolus gradually contracted until, at the time of the present report, four months since the operation, it has nearly closed. No indications of recurrence have as yet appeared, and the patient has no inconvenience from his small antral fistula.

In the light of modern pathology this case is reported as one of cyst of the antrum, although it presents many of the clinical features which we might expect in true *hydrops antri*. It was impossible to distinguish a separate cyst wall, and it is difficult to believe that a cyst could have become so agglutinated to the walls of the antrum as to obliterate at all points a line of demarcation between its wall and the lining membrane of the antrum. Its disappearance is explained by absorption, the cyst rupturing into the antral cavity and every trace of the sac ultimately becoming effaced. The character of the fluid found in the cavity supports the cyst theory, since it resembled mucus in no respect, but, on the contrary, was a yellowish, slightly turbid serum. Cholesterin crystals are often met with in the effusion and are considered pathognomonic of cystic formation. In the present instance the examination of the fluid was negative, no cholesterin being found. An examination of the excised piece of tissue by my friend Dr. Jonathan Wright failed to indicate whether it was the thickened lining of the antrum or a cyst wall. His report is as follows: After having been stained, one surface of the specimen was seen to be lined by a thin layer of flattened epithelial cells (three or four rows deep usually). Directly beneath this was a layer of fibrous connective tissue with very few round cells or nuclei; but everywhere a dense crowd of red blood-corpuscles. At one point, near

the edge and free from epithelial covering, were a few bundles of striated muscular tissue (?). There were but few blood-vessels and no glands, although in certain places the reaction with hæmatoxylon stain suggested the pre-existence of glandular structure destroyed by pressure. Beneath the dense fibrous layers which constitute most of the thickness of the specimen were areas of loose connective tissue.

147 West Fifty-seventh Street.

REPORT OF A CASE IN WHICH LAPAROTOMY WAS PERFORMED FOR INTESTINAL PERFORATION OCCURRING IN THE COURSE OF TYPHOID FEVER.*

By L. W. HOTCHKISS, M. D.,
SURGEON TO THE MANHATTAN HOSPITAL, ETC.

On the 13th of August, 1895, I was asked to see with Dr. Knickerbocker, at the Manhattan Hospital, a case in which he had made the diagnosis of intestinal perforation. The patient was a Swede, twenty-four years of age, a carpenter by trade, who had been admitted to the hospital, August 7th, with the following history: He had been in the hospital a year before, suffering from an intermittent fever, for which he had been treated and discharged cured. His present illness began about ten days before his admission, with chills, fever, headache, and anorexia, accompanied with great prostration. He had not been confined to bed all the time, however, and, though he felt very wretchedly, had managed to walk to the hospital. The examination of heart and lungs was negative. There were several small, rose-colored spots over the chest and abdomen, which disappeared on pressure. The temperature was 103·8° F. A diagnosis of typhoid fever was made, and treatment by Brandt's method of baths instituted. The patient bore the baths well, his tongue grew moist, and his pulse improved.

On the night of August 12th he complained suddenly of intense abdominal pain, and was ordered morphine. Next morning he was seen by Dr. Knickerbocker, the attending physician, who suspected perforation, and asked me to see the case with him, with a view to operation if that should be deemed advisable.

On examination, the abdomen was found considerably distended, exquisitely tender on pressure, and the patient suffering constantly from general abdominal pain. His face was anxious and drawn; his intelligence perfectly good. He had vomited. Pulse rapid; temperature high. The seriousness of his condition was presented to him, and the possibility of relief by surgical means explained to him. He said he was anxious to have something done, and would willingly submit to operation to obtain any relief from his terrible pain. He was transferred to the surgical side, and operated upon as soon as preparations could be made.

Ether was used as an anæsthetic, and a median incision, three inches and a half in length, made between the umbilicus and the pubes. On incising the peritonæum, a large quantity of cloudy, serous fluid, containing big flakes of fibrin and probably some fæcal matter, gushed out. There was but little odor to this fluid. The peritonæum covering the small intestines and everywhere was deeply congested, and covered here and there by patches of soft fibrin. There were no adhesions. Enlarged lymphatic glands in the mesentery were distinctly visible and palpable. The cavity was flushed out thoroughly with hot normal salt solution, and a search for the perforation was at once made. It was easily found in the lower part of the ileum, about five inches above the ileo-cæcal junction and on the anterior wall of the gut. The perforation was quite small, its edges ragged, and the tissues surrounding it infiltrated and much softened. Through the wall of the gut the thickening, corresponding apparently to the enlarged Peyer's patch, could be felt. The perforation and softened area about were turned in longitudinally for an inch or more and sutured with fine black silk after Lembert's method. The turning in of the intestinal wall well beyond the edges of the ulcer brought into contact a considerable area of peritoneal surface. After again thoroughly flushing the whole peritoneal cavity with hot sterile normal salt solution, the diseased portion of the ileum was surrounded and isolated by packing of sterile gauze. The upper end of the abdominal wound was closed, the lower left open for the gauze drainage. After the operation the pulse continued very weak, but the patient recovered consciousness and said his pain was less. He continued to sink, however, and died about four hours and a half after the operation, his temperature rising to 108° F.

An examination of the abdominal cavity after death showed essentially the same conditions as described. There were no other perforations found, and there had apparently been no leakage from the sutured rent.

The portion of the ileum which included the sutured area was removed and sent to the Carnegie laboratory. Sections through the sutured portion of gut showed that sufficient fibrin had already been thrown out to hold the sutured peritoneal surfaces in firm apposition.

In putting on record this case in which laparotomy was done for perforating typhoid ulcer, one more is added to the small number of cases in which an attempt has been made to relieve this fatal complication of typhoid fever by surgical means.

According to a recent article by Dr. F. H. Wiggin, there have been only seventeen well-authenticated cases of perforation of the gut in typhoid fever reported in which a laparotomy was performed, and out of these seventeen patients so operated upon three recovered.

Of the three successful cases, one belongs to Dr. Van Hook, a second to a Russian surgeon, Dr. Netschajan, the third to Dr. Robert Abbe, of this city.

Realizing that in most of these cases we have to deal with a very rapid and fatal form of peritonitis, our only hope seems to lie in an early operation. In the case reported, about ten or twelve hours had elapsed since the perforation had occurred, and general septic peritonitis had supervened, rendering the case practically hopeless. I feel that in perforations of the gut in typhoid fever we may not always have to deal with an equally rapid and fatal infection. As in perforative appendicitis different forms of peritonitis may result, varying from a fibro-purulent peritonitis more or less extensive to an acute septic general peritonitis or peritoneal sepsis which is rapidly fatal, so in typhoid fever it would seem that in some cases where the ulcerative process is not too rapid and the infection not too intense

* Read before the Society of Alumni of Bellevue Hospital, November 6, 1895.

and overwhelming, a peritonitis might result which could be as successfully treated by an early laparotomy as are many cases of this disease due to perforative appendicitis.

Realizing that in these cases we have to work with the chances of a successful issue decidedly against us, and upon a patient in the worst possible condition generally for operation, I feel that it is only fair to give the patient the possible chance, small though it be. I feel that the operation is not only justifiable in many cases, but should be offered to the patient as giving some hope in a condition otherwise practically without it.

I think the operation should be classed with tracheotomy for laryngeal stenosis, and with herniotomy for the relief of strangulation—*i. e.*, as an occasional life saving procedure. It is not too much to expect, perhaps, that some time in the near future the surgeon will be oftener called in cases of typhoid fever where the diagnosis of perforation is made.

"ONLY NERVOUSNESS."*

By HERMAN CANFIELD, M. D.,
BRISTOL, R. I.

If any of you are expecting to hear a scientific discourse upon the subject chosen by me to-night, you will be greatly disappointed, and have my free permission to settle yourselves comfortably for a nap, while I impose upon the patience of our good president for the short space of a quarter of an hour.

Upon second thought, perhaps, you would better keep awake, as what little I have to say touches one phase of your daily labor, which, if rightly appreciated, proves the biggest little thing among the great mass of little things which together influence your success in your profession.

Unfortunately, as we all know, it is not the most learned, the most intellectual, or the most skillful in strictly scientific matters who succeeds best in a practical way in our profession. Briefly, it is the one who can "make himself most solid" with his patients; and the real mainstay, the one sure, steady source of income to every doctor is his nervous patients. If he can handle this class, manage and control them, his success is assured.

No amount of professional knowledge can compensate for a lack of tact in gaining the confidence and directing the life of a nervous woman. Often I hear young physicians say they "do not want to bother with cranks"; and often, when it is too late, do they find they have thrown away the cream to barely subsist upon skim milk.

But there is a far higher consideration, another aspect to the case, which must appeal to every right-minded, generous-souled, and conscientious physician: the distress, the continuous acute suffering, the actual agony physically, and the horrible confusion, unrest, and deep despair of depression mentally, which render the "only nervous" worthy of our study and best care.

"It is only nervousness." Yes, so it is; but have you ever for a moment attempted to realize the length, breadth, and depth of suffering so briefly summed up in that glib phrase?

"Only nervous!" Well, is that not enough? Because it does not kill, because there is no fever to be controlled, no cough to be choked down, no abdomen to be opened; because the enemy does not declare himself, does not bid defiance from some vital position, the routine physician shrugs his shoulders, the surrounding friends pocket their fears, and all assume that irritating, patronizing attitude of "Oh, well! you'll come through all right. It is very foolish in you to give way so, but we will stand it." "Only nervousness," and the weary invalid turns her face to the wall and wishes it were only death.

For twenty years my daily path of duty has lain among the sick, in hospital, private practice, and sanitarium, to witness all phases and degrees of human suffering, and I say without hesitation, and with perfect confidence in my ability to meet all who may enter the lists to controvert me, that there is no suffering, mental or physical, which can in the slightest degree equal that usually covered by the cant phrase "only nervousness."

I know it is a great thing to have all your little town buzzing about how you cut off John Smith's leg, how you sewed up Mary Jones's scalp, how you brought Jane Brown out of a fit—all this is something people can see and understand, and it seems like coming down a little to turn your thought to the "only nervous."

But Alice Buxton will send for you to-night. Her mother will meet you at the door with, "There is not much the matter, doctor, but Alice has been working a little too hard at school. She ain't got nothing that I know of, only nervousness." I know you are in a hurry, and Mrs. Toner is waiting for you to officiate at the ushering in of the thirteenth little Toner on the list; but off with your greatcoat and draw up your chair beside the pale girl who stretches out a trembling hand, and whose face flushes with the false semblance of health as she bids you good evening.

She, too, will tell you, "I don't think there is much the matter with me, doctor. I am only nervous." Look closely. Do you see that strained look in her eyes, that drawn, set mouth, the side of the nose contracted—why, she is driving the very nails into the flesh; you see that line of perspiration at the roots of the hair upon that clearly cut forehead; one foot rapidly beats the carpet while its mate moves uneasily from time to time.

No, she does not sleep. She can not stop thinking. "And such foolish thoughts, too, doctor"—here she laughs in a high-pitched tone—"I know it is all foolishness, but I am afraid all the time that something will happen. I am afraid to meet people. I am afraid to be in a crowded room. I feel as though I should suffocate. I can not sit in a pew at church unless I have the end seat. I can not take a front seat at the theatre. I can not go anywhere alone. I wouldn't cross that open square for all the gold in the world. I am afraid of thunder. I am afraid I am going to die, and yet I am sure I don't want to live. I know something dreadful will happen"—here

* Read before the Society of Alumni of Bellevue Hospital, November 6, 1895.

come the sobs—"and I don't know what it possibly can be."

Now do not tell her that nothing will happen; she knows that as well as you; but do you see to it that something does happen: that you then and there make a careful and thorough study of her case, that you find the *cause* of this nervousness, that you go to the very bottom of the matter.

You will find it no mean task; you have a foe here worthy of your very best skill, and you can have no hope of dislodging the enemy unless you make yourself perfectly familiar with him in all the multitudinous shapes he is capable of assuming. True, you can cover your laziness or ignorance by diagnosticating "only nervousness"; it will satisfy the friends, and you may ease your conscience by going to Mrs. Toner, who is visibly suffering. But, doctor, the day may come when, take my word for it, you will find it easier to endure a surgical operation every day than to be "only nervous." Listen not to the whispering of the siren voice of a vulgar glory, but do your plain duty. Bring out your brightest, sharpest case of wits, and hunt down the host of devils that are rendering earth a hell for this poor girl. Strike them down one and all, restore her nervous apparatus to a healthy working order, and you will have gained a friend who will never forget you; a measure of gratitude well pressed down, full and running over; and, between you and me, the insane asylum may claim one less victim—one more human being may escape that living death. Half its inmates are there now only because our ignorance or intellectual inertia long ago set the stamp of "only nervous" on the invalid, who was thereby left to time and good luck to survive or to succumb to the awful suffering, fed upon the hard rock of indifference, instead of being nourished by the milk of human kindness.

Many of these cases have no obvious cause, or a number of small items go to make the cause, which the friends will not think worthy of mention. First of all, make friends with your patient; see her often—morning, noon, and night; watch her every action, all her movements, her habits, the trend of her mind, her likes and dislikes, her occupations, her friends. Let nothing seem too small; examine every point, get inside of her, look out with her eyes, feel with her sensitiveness, move with her motion, think with her thought, know her love and her hatred. Feel her religion, wrestle with her unbelief, feel her abject conscientiousness, enjoy as she enjoys, and descend with her into the blackness of her failures and disappointments. The old Greek philosopher said "Know thyself," but I say to you, Know thy patient as thyself. Do not be discouraged; the mystery will resolve itself if you keep at it, and you may well wonder at the simplicity of the problem you have been at so much pains to solve. Always remember that the "only nervous," as a rule, become so from no marked, distinct cause, but usually from dropping one after another of the links in their automatic life, and thus by destroying the unity of the whole throw into prominence symptoms which are really exaggerated traits of the true character or the items that go to make up the natural life. To know how much influence this has in the case before you, you must go far back into family history and infantile life. For her present condition half an hour's quiet observation without your patient's knowing what you are doing will tell you more than a day's direct questioning. In fact, I seldom waste my time in talking directly with nervous people about themselves, but gain my information when they are not expecting examination.

Overwork is considered the great cause of American nervousness, but I doubt if there is any such thing as overwork. "It is not the turkey that rests bad, but the fillin'," as a Jersey "schoolmarm" once told me.

There is nothing in the world so good for "nerves" as work, and even overwork can be borne for some time without injury; but the combination of overwork with habits always harmful does the mischief, and overwork, being in bad company, bears the blame.

Overwork is a myth. It covers more sins than malaria, and outfashions *la grippe*. No matter how much a man works, but it does matter how many cigars he smokes during that work, how much thirst must be quenched by the seductive cocktail, "just for a bracer, you know," and then *the worry*. Ah, there's the rub! One gallon of work, most health-giving; but add one drop of worry, and out with the vile poison! The late hours, too, the hasty meal, and then Nature's calls. "Oh, my bowels give me no trouble when I am at work. I do not need to have a movement oftener than once weekly"! And then men break down and talk of overwork. Not a bit of it. Overwork has a very small finger in the great "only nervous" pie.

Alice Buxton, upon whom we just called, has been sent home from school, suffering from overwork. You question her in regard to her studies and habits, but discern nothing. She is "only nervous," but that has reduced her to a state of abject unhappiness. You examine this organ and that; true, they are all more or less disordered, but if you are a gynæcologist and find a slight displacement of one of the pelvic organs, and nothing else upon which you can lay your finger as a cause, ten to one you decide that this is a case where unusual sensitiveness causes disturbance out of proportion to the displacement. The friends are delighted, and the fond mother loses no time in retailing to her neighbors how "Alice is such a sensitive child, you know, and what could not disturb your Minnie, does affect her awfully." Fiddlesticks and bass drums! Must every woman have a straight nose? Does it irritate her nervous system to have the tip a little to one side? And then, too, if you have been a close observer you must have noticed that it is very seldom when we know nervous symptoms to be dependent upon pelvic disease that an operation relieves the nervous symptoms until they have been treated also.

Let us try again. She has indigestion, nausea, headache, constipation. True, and if you are a general practitioner, you will tell her she will be all right when that sensitive stomach is relieved; and pills before, and pepsin afterward, and tonics in between, are expected to perform the miracle. Several months of drug-stuffing find her only worse.

"How could those doctors have been so stupid!" says the oculist, and forthwith those eye muscles are cut. A prism gymnasium is introduced into the household; hideous in her dark glasses the victim worries on, while the oversanguine oculist's bank account swells day by day. Sometimes these unfortunates go on for years—now full of hope, now in the depths of despondency, at all events unhappy, and rendering those about them also miserable. The disease outgrows itself and the first cause is lost sight of. Alice has become a classical invalid.

Now, how did this happen? Alice was studying hard, her brain was doing its best, and, kept at a continual high tension, was in a state of abnormal impressionability. A religious movement was going on in the school and Alice became interested. After her work was finished she conversed with her roommate upon the subject; sleep was lost for a night with thinking of it. She would drop the subject as she must sleep, but the next night, owing to the intense impression made upon the sleep centre by the unusual disturbance, she lost her sleep again. By this time the sleep centre had lost its automatism; it did not know just what to do; it had fallen into bad company, had lost its old associations, and had made new acquaintances. Had Alice then and there exerted her will, compelled that sleep centre to do its work at the right time, all would have been well; but she must sleep, and the nurse was called upon for a hypnotic, to the still further confusion of the sleep centre. The next night this was all at sea and, being again aided, began to think such help the proper course, and thereafter refused to respond without assistance. I am giving now an extreme case, but one which well illustrates the general principle.

Now comes in the element of worry. As I said above, the automatism is destroyed. Alice begins to worry. Keeping up her work, she expends all nerve force supplied by food during the day, and for her insomnia and worry about religious questions she calls upon her reserve nerve force, of which we all have a greater or less supply in health. Soon the hypnotic disturbs her stomach; her digestion fails; she can manufacture less nerve force during the day, and yet greater calls are made daily upon that reserve force.

In the meantime she may have ceased to dwell upon the religious question, but she now has something more to think of; her health is manifestly failing. One day, as she is crossing the large vacant lecture room, a sense of fright seizes upon her, shaking and trembling in great terror with tearless eyes. She does not know what is the matter, only she is "so frightened." Thereafter she will dread to be alone, she will fear all open spaces, and she can not force herself into any large, vacant room. She begins to think how everything will affect her; thoughts of herself now take up a great part of her time. Almost all automatic action is now supplanted by conscious action. "Why, I never used to think anything about myself; now I can think of nothing else. I am in constant fear; a continual apprehension disturbs my sleeping moments."

Mark now carefully how, growing up in health, all her nerve centres had come to act in a perfectly automatic way. "I never knew I had a stomach. I did not know what nerves were, and I fell asleep as soon as my head touched the pillow." The chain of association was perfect, and daily one link after another ran smoothly over the bearings of a well-oiled brain, and her life was propelled gently along as a car upon an endless cable. Now everything is all wrong, and her doctor is unable to tell which of all her disturbed organs is most at fault.

If any man should be a gifted man it should be the healer of nerves; for, without disparagement to his fellow-workers, he continually has problems to unravel such as are not dreamed of by others. Take any case of insanity, trace it back, and you will find the origin in some disturbance in the automatic life of the individual. To-day I meet with a loss of money. I spend hours in bewailing my loss and in receiving the commiseration of my friends. For some reason of health I may be just at that time in a particularly impressionable mood. My nerve centres take on an impression of deep sorrow. The next day I do not throw it off. My nerve centre of joy is inhibited, my capacity for feeling grief is increased. I lose more money; my sleep goes, my appetite becomes capricious; the nerve centres of joy do not respond at all, while those of sorrow are full of life. And so it goes, until the one is so obliterated and the other so increased in activity that I become a subject of melancholia for life.

Again, to go back to Alice for another illustration. She is just budding into womanhood, full of purity and innocence, and replete with ignorance as to her physical make-up. She spends the evening at a concert or the opera, where her senses are played upon until she comes home thrilled through and through, and pleasurably alive throughout every nerve. It is a warm night, and she falls asleep with music ringing in her ears. She is awakened by a dream full of horror to her; she has had feelings unknown to her, such as she would not think of during her waking hours nor breathe a word of even to her mother.

No one has told her she is ever to have such an experience. She goes through the day full of terror. She must be bad, she must be different from other girls; she surely has been guilty of some great sin. Study as she will, her mind steadily returns to the subject during the day, and she retires at night full of fear lest she be subject to a repetition of what has now become most horrible to her. She hates herself. It has never occurred to her before, but she now realizes that her sexual system is an active part of her. Unless her motherly teaching differs from that commonly in vogue, she shares in the too prevalent belief of young women, as well as of those older whose intelligence should teach them better, that it must be a low part of her; it can only be abjectly low and degrading. Again there is a repetition of the night before, brought about by an overexcited and violated imagination. She awakens convinced that she has committed "the sin against the Holy Ghost." She imagines she must show it; her face must tell to the world how utterly vile she is; never more can she claim to be a good girl. And this is no overdrawn picture. Go into any insane asylum and you will find more than one victim of such ignorance, the result

of false modesty on the part of parents, where these excited impressions made upon one nerve centre have developed that centre to such an extent as to cause the mental destruction of the poor unfortunate.

And now what shall be done for the "only nervous"? Having discovered the cause, remove it if possible. As I have said, the first cause will more than likely have been lost sight of, and the present condition be the result of abnormal impressions made upon nerve centres from time to time. It seems easier to impress a nerve cell wrongly than rightly, and the process once begun, the nerve cells simply run riot. Some one organ may be at fault, and be the cause of irritation. If this is manifestly so, restore that organ to its natural state if possible, but at the same time be not over-sanguine, for sooner or later all the nerve centres at fault must be reimpressed, and the simple doing away of the local irritation will not accomplish all. This is the cause of many disheartening failures with the "only nervous." Look deeper for the cause, then set to work to reconstruct and impress the nerve centres. Demonstrate to your patient the futility of depending upon drugs or any external means. Make her understand that the larger part of the treatment falls upon her. You can point out the way, but she must do the work. Regulate her whole course of life, from awaking in the morning to sleeping at night.

A nervous patient will do better among strangers than when surrounded by sympathetic friends, who, as a rule, simply deepen false impressions by reiterated expressions of sympathy. Change the environment completely, break up all old associations, and let the patient go among strangers, where she will feel more or less of a moral restraint.

Let everything be done to strengthen the physical body and build up the physical side of the nerve centres. See that the patient eats and digests as large a quantity of food as possible; let this amount to stuffing even. Give massage to supply the exercise, and let the patient remain quietly in bed, to store away all the strength gained.

That part of the food which goes to the nourishment of nerve tissue must undergo a process of preparation far more complicated than that for any other part of the body. The supply manufactured through the day is necessarily small. Hence it is a part of Nature's plan that we should have a reserve of nerve force. You hear of persons living on their nerves, or doing this or that upon their nerves. This is literally so, and until this reserve gives out they never become "only nervous." Now this reserve force must be renewed. Hence, put all the food possible into the "only nervous," and allow them to expend only the smallest amount compatible with existence. The ways and means of accomplishing this are too numerous and complicated to admit of recital here. There is no plain sailing to it, no two days are alike, and where one means fails another must be found to take its place. But doctors and patients have one consolation: success will almost invariably follow their combined efforts. No class of disease is so amenable to treatment, and in none is there so sure a prospect of success.

Once the only nervous comprehend the natural physiological action of the brain and its adjuncts, they quickly understand how they became "only nervous," and the path of recovery lies open to them.

Oh, but the journey over that road! That is another matter. Recall again that in the infant nerve centres there are not only undeveloped nerve cells, but material for the formation of numberless other cells; that every new thought, idea, or impression goes to build up one or more of these cells; and that every action is the result of a chain of associated ideas previously formed.

Keeping all this in view, it follows that the idea of recovery must be implanted and encouraged in its growth in the same manner. For example, and we take an extreme case for the clearer illustration:

Miss M. was more than "only nervous." She had been suicidal, and thought she had committed "the unpardonable sin," though what that was she did not know. She could not sleep, would not eat, and knew she should harm some one, if not herself, and did not wish to meet anybody. She was told that she would not commit suicide, and whenever the idea came into her mind she was to say to herself that she *would not* commit suicide. She was to avoid thoughts of death, and read no accounts of it, or of suicide, in the papers. She was continually to say, "I will live; I must live; I want to live." She was to drop the thought of the unpardonable sin in a passive way, not only not to dwell upon it, but to refuse even to think of it. She was to prepare for her sleep in the usual manner, taking it for granted that she was to sleep. When she found she was not sleeping, she was to take no notice of it, but say, "Oh, well, I do not care. I am resting, and I want to think of so and so." She was not to try to fall asleep, but was to repeat poetry, and to think of one and another pleasant thing—of anything but sleep. As for eating, she would do that as she would take medicine. A nutritious diet was selected for her, that the most nourishment might be obtained with the least expenditure of energy in digestion, and this she was to take in spite of everything. No notice was to be taken of any resulting symptoms. If she vomited even, the same meal was to be taken next time. A certain number of hours during the day were to be devoted to company, whether she felt inclined or not. There, you see, constant pressure was brought to bear on the nerve centres at fault, and as a consequence a few weeks showed a complete restoration to health.

Many of the symptoms of the "only nervous" border upon the silly; but ridicule or scolding only makes a bad matter worse, as it calls attention to them in a most emphatic manner, and only serves to impress them the more deeply, even if the patients join in the laugh, as they almost always do.

When there is apprehension, there is no use in telling patients they are fools, nothing will happen. They know they are not going to have leprosy, die of apoplexy, become paralyzed, drop off with consumption; but in some unfortunate way such an impression has been implanted upon their nerve centres, and only time and a steady course of counter impressions, or a dropping out of that line of thought, will obliterate it. Your wife tells you she is going to die. Do not tell her she is a fool, you know better; but say, "Remember how much you have to live for, think how you may enjoy life, and now let us take a drive that you may think of something else."

Every symptom must be combated passively and actively by the patient, and that, too, under wise direction, for when the nerve centres are at fault and have lost their automatic guidance they are all at sea, and more often guide wrong than right. In fact, the feelings in an "only nervous" patient are no guide at all. They should seldom be consulted and never relied upon.

For instance, in the matter of eating. When one begins with "only nervousness," the action of the stomach is usually the first organ to attract attention. Veal was taken at dinner; the distress following must be due to the veal, because that has a bad reputation. The first thought was, "It must have been the veal"; the second, "Yes, veal hurts a great many people, it was that which hurt me"; the third, "I must eat no more veal, I know it hurts me."

At the next meal the stomach is still at fault. "Veal hurt me yesterday; meat can not be good for me. I must stop all meat." At the next meal it is the bread; the various kinds are tried successively, and the patient settles down to dry, stale bread or none at all. Finally, no solid food will agree without pepsin. One after another article of diet is laid aside, judged at the bar of the feelings, until I have seen patients subsisting upon a few teaspoonfuls of beef tea when nothing stood in the way of digesting a good pound of solid beefsteak, except the false idea which had so insidiously crept in and produced so strong an impression upon the nerve centres that they would not act until that had been done away with. There is a deal more in the old saw, "You can, if you only think you can," than we give it credit for. Mind acting upon matter has greatly to do with "only nervousness." The mind doctors and faith healers are teaching us a lesson we should not be slow to heed.

In closing, let me repeat that the whole treatment of the "only nervous" is based upon two principles: First, the physical restoration of the weakened nerve centres, the manufacture of nerve force to replace the lost reserve power, the reduction of nerve impressionability, and the regulation of nerve impressions. Second, the education and discipline of nerve associations, and the development of nerve centres upon a correct basis, with the deadening and destruction of those nerve centres brought into action by chance impressions and the repetition of unhealthy stimuli.

Any treatment based upon these two principles will bring relief to the "only nervous"—to recent cases complete cure, and to those chronic so much of comfort that actual cure will not seem so necessary.

You, upon whom so much depends in the treatment of this unfortunate class, I beg of you, do not fall into the way of putting off these "cranks" with a placebo, and, above all things, never under any circumstances purchase a dishonorable respite from their importunities with a narcotic. One hypodermic may be the patient's ruin, and the burden of the dire result is sure to fall upon you. Better give up the case than give a narcotic. Tedious and tiresome these cases always are—at the very best often unsatisfactory; but when you do cure such a case, consider the sweetness of the victory gained; and, moreover, if you learn to manage such cases successfully, your professional success is assured, and no class of patients is more grateful, none knows so well what you have really done, and no patient will be so long in forgetting the service you have rendered.

PROPHYLAXIS IN TUBERCULOSIS.*

By C. P. AMBLER, M. D.,
CANTON, OHIO,
FORMERLY LARYNGOLOGIST AND RHINOLOGIST
TO THE WINYAH SANITARIUM, ASHEVILLE, N. C.

While our most renowned professional brothers and bacteriologists are patiently and laboriously working away, hoping to solve the treatment of tuberculous disease, we, as physicians in active practice, should not ignore the discoveries that have already been made merely because we have not all had practical instances of cures under our own observation; and we should constantly bear in mind that, while the treatment of the latter stages of tuberculosis is still hopeless, and always will be, the advancement in prophylaxis has enabled us to at least guard and protect many persons who without our advice would become tuberculous.

It is not the purpose of this paper to enter into statistics and authorities upon this subject, but to give some facts and observations made while I was serving for four years as house physician at Asheville, N. C., in one of the largest, best-established, most thoroughly equipped and scientifically conducted sanitariums for the treatment of tuberculosis in the country.

Tuberculous bacilli have been demonstrated in the newborn, but we do not believe that the tuberculous deposit is present at birth, except in a very small percentage of cases. But we do believe that many individuals are born with a certain predisposition for the development of tuberculous lesions; that by the influence of these predispositions the proper culture medium is prepared in which the tuberculous bacilli, when brought in contact with the medium, find a favorable nidus for development; moreover, that persons without this predisposition, either inherited or acquired, can breathe air laden with tuberculous bacilli with impunity.

In dealing with tuberculous disease our greatest good must be accomplished through prophylaxis. We must strike it, as Jenner did small-pox, before it strikes us. Notwithstanding the fact that Klebs is now supplying us with a product which certainly does wonders in cases in the early stage, we must not look to this for entire relief. Unfortunately, the majority of cases we meet with are already in the second or third stage, and this will continue. Prevention will always be better than cure, even should our "cure" become specific. If a tuberculous focus is once started the organ is crippled.

Recent experiments have shown that, while dust in halls and public gathering places contains the bacilli, the danger from that source is less than has been supposed. The frequency of tuberculous lung trouble has led us to believe that this came about by inhaling the germ and thus starting the disease. We have ignored the fact that we introduce the germ by the alimentary canal; that a de-

* Read before the Canton Galen Club, October 17, 1895.

posit may primarily be in a gland along the digestive tract; that this breaking down may set free into the circulation tuberculous material, only to be strained out, as it were, in the pulmonary circulation. The lodgment in the pulmonary tissue being secondary, and this being a tissue of less resistance, offers a favorable location for rapid development.

Is it not possible, considering the large number of tubercular cows in the country, that our infants have the germ introduced by their milk?—that these germs find lodgment in the lymphatic glands of the child, remaining quiescent for years, until the time of puberty, or later?—that during the rapid change in nutrition, growth, and development of this period, these old tuberculous deposits are set free in the circulation and are carried along until they meet obstructions in the lung? How else can you account for glandular enlargement in a child seemingly perfectly healthy? And how many bottle-fed babies, or children fed upon cow's milk, do you meet that do not some time during their early years have enlarged lymphatics?

In those countries where cow's milk is unknown as an article of food do you find tuberculosis as common as here? Milch cows are unknown in China, and, while we know but little of statistics concerning China, it has long been recognized that lung trouble is less common there than here. Massachusetts recognized this fact, and now has State officials who inspect all dairy herds. Thanks to Koch, we can tell absolutely whether or not a cow has tuberculosis, and all States should follow the example of Massachusetts.

Ignoring the infection of wounds, then, we have but two methods of entrance for the bacilli: food and air. Reasoning from this, the only method of avoiding the germ would be to eschew all public places and pass one's days in the primitive method of our forefathers: to erect a dwelling far removed from the haunts of men and live in comparative solitude.

Taking it for granted, then, that we are compelled to live in an "infected district," that we are all more or less constantly exposed, especially during childhood, the question becomes one of prophylaxis. Under prophylaxis the food question is deserving of first place. As has already been stated, the milk supply should receive the most careful attention. The State should appoint inspectors. These inspectors should be educated men, capable of giving the necessary injections in suspected cattle or cows, and well enough versed in medicine and bacteriology to make a correct diagnosis. No milkman should be allowed a city license unless he first has a State license—a certificate from the State inspector. The killing of cattle for consumption should be under some restriction. There is too much meat offered for sale that has been killed for fear that if allowed to live the animal would soon die.

No consumptive or person known to have tuberculous disease should be allowed to handle, dispense, or offer for sale in public any kind of food or breadstuff; and this brings up a state of affairs that soon must come about—viz., legislation compelling physicians to report to the local board of health all tuberculous cases as soon as recognized.

We now come to the most important question of all: Is the presence of a tuberculous patient in the household a menace to the other members? Under ordinary circumstances, yes, and most emphatically yes; for, while the remaining members of the household may be healthy and free from predisposition, the time is sure to come when one or more members will suffer with bronchitis, pneumonia, or some predisposing ailment, and then they may become susceptible, to say nothing of the necessary infection of food in the home and the danger from infecting wounds or abrasions.

Must we, then, quarantine against all tuberculous patients? Scientifically it would be the better plan, but practically it is impossible. We now quarantine for diseases that are not nearly so fatal as tuberculosis; but this is only in diseases that develop quickly after exposure, that run a rapid course, and consequently are more alarming. The laity can understand why such diseases should be avoided, but are slow to realize that tuberculosis may be even more fatal, and that the symptoms may not appear for months or years afterward.

If an attempt were made at this time to limit the tuberculous, the masses would immediately cry out for "rights," and say the doctors were only trying to get more positions. It is the insidiousness of this accursed disease that makes us so tolerant of it.

In place of compulsory confinement or quarantine, all we can do at present is to attempt to impress upon the laity that there is danger, not from breathing air which the patient has already inhaled, but from carelessness on the part of the patient in depositing sputa. He must never expectorate on the ground, floor, walk, coal-scuttle, or fireplace; he must use and keep separate his own napkins, bedding, handkerchiefs, and towels; should have private eating utensils, unless they are always subjected to steam; should never kiss and caress, especially children; must always deposit sputa in papers or small rags carried for the purpose, and when used they should be placed in a waterproof pocket until they can be burned; he must have his own room furnished without carpet or unnecessary hangings, and the room, furniture, and bedding must be subjected to frequent disinfection.

Thus conducted, the presence of the consumptive will be of very little danger to his friends or to the neighborhood. Without it he is the means of spreading broadcast death and destruction; his nearest and dearest friends are the ones most liable to suffer from his carelessness. He and his friends are constantly expecting some improvement, and the frequent respites that he enjoys, that so encourage them, are only among the saddest features of the disease. They raise his hopes and courage; he comes into closer contact with his friends, becomes more careless, and he should at this time be especially instructed by his physician.

When the patient is beyond hope of ever enjoying life again, the duty and attendance of the physician, instead of being relaxed and indifferent, should be all the more vigilant, remembering that a few instructions may save others, and, while "we can not save the burning building, we may save those surrounding it"

In some parts of Germany they have already passed laws prohibiting tuberculous patients from expectorating in public places. This is certainly a move in the right direction. Some say this can not be done. Why not? Because there would be such an army of patients and their friends arrayed against such legislation. True, very true; and should this army of slow-decaying, infecting, and depopulating patients have the right to go on with this wholesale spreading of a disease that already causes nearly forty per cent. of deaths the world over?

The Germans have been the first to realize the benefit of institutions for the consumptive. We now have a number of such institutions, both public and private, in this country—in New York, Colorado, Texas, and North Carolina. As yet the percentage of recoveries in these institutions may be small, but who will deny the benefit derived, not only to the patient attending but to the family and locality from which he came? How many physicians consider, when sending a consumptive to an institution or different climate, that they are protecting those at home as well as benefiting the patient?

On first thought one would suppose that such institutions would only be breeding places for the disease; that, by the number of patients in all stages, the danger to the community and those conducting the institution would be very great. If the place was not conducted upon hygienic principles, if patients were allowed to conduct themselves as they do in many homes, and if the greatest precaution and untiring vigilance in all matters were not exercised, then this would be true.

In comparison with the hotels at health resorts, the ideal sanitarium of to day is by far the preferable place to live in, especially to the initiated. A large percentage of the visitors patronizing health resorts in the South to-day are tuberculous. They generally state that they have bronchitis or weak lungs, enter the hotel as guests, and are given a room probably heavily carpeted and draped. No matter how far advanced, or how disgustingly careless he may be in regard to expectorating; no matter how long he remains, or whether he leaves alive or dead, upon his departure the room is swept and dusted, the linen is changed, and it is ready for the next guest. There may have been fifty or a hundred such occupants in the room during the season; several of them may have died there, and no further precaution has been taken than above stated. You and your family arrive and are assigned the same room or suite of rooms, and if any of you are in poor health, or have any predisposition, what wonder if tuberculosis develops later?

I recall one case now, that of a patient who had occupied a suite of rooms in one of the largest hotels in the South for five months. He was a man who was disgustingly careless, indifferent and tolerant in regard to sputa. He died one night at 2 A. M. I was present myself when he died. The body was quickly prepared for transportation and was on its way to Cincinnati before 7 A. M. At eight o'clock the same morning the governor of one of the neighboring States was installed in the same suite of rooms with his family.

Until one has had experience in hotel work at health resorts he can scarcely realize how tolerant a consumptive can become of his own filth. It loses its horrors for him, and he can not realize why it should be so offensive to others. Of course there are exceptions, in which the patient is sensitive upon the subject and is scrupulously careful, but such cases are rare. It is not only in the lower walks of life that this is observed; it is found among the influential, the rich, the well-bred, and crops out in a person of whom you would expect something better.

This is not a pleasant subject, and one that I have never seen in print, but it is without any doubt the cause of infection in many cases. When this constant coughing and expectorating goes on for months, the mind loses the finer sensibility; and while we must have nothing but pity for the poor unfortunates, it is our duty to see that they exercise care and judgment.

One of the most beautiful and refined women I ever met, the wife of a distinguished Ohio judge, while suffering from this disease was thoughtless and indifferent enough to her surroundings to expectorate into a napkin at her hotel table. Two years before, she would have left the table had she seen such a thing done.

A Boston lawyer, upon being directed to bring us a sample of his sputa, presented a side dish from his hotel table full to the brim, stating that this dish must be returned.

The worst instance of what we might call tubercular depravity was in the case of an Ohio man who moved into the mountains of North Carolina. I was called to see him, and found him in bed. The bed was against the wall, and he was expectorating upon a newspaper hung on the wall above the level of the bed. He had been told to be careful where he expectorated. Upon investigation, I found that as one paper became soiled he simply applied another, and at that time there were several thicknesses of paper. They had not been taken down for days, and he really thought he had done something smart.

In my own experience, and from the experience of others, I know it to be no uncommon occurrence for the consumptive, when questioned as to the character of his sputum, to offer a sample for inspection in the palm of his hand. I do not intend to reflect upon the habits of the better class—and, as a rule, it is only the better class who can afford to patronize resorts—but I could give hundreds of such instances, many worse, to show that if there is danger from sputa the tuberculous person without restriction, education, and constant watching does become a nuisance to those about him.

In an institution properly conducted all this is changed. The rooms and corridors are furnished with an idea of thorough and frequent disinfection; floors are polished; walls and ceilings are painted and varnished; cuspidors containing powerful disinfectants are numerous, and their use is compulsory, the same being cleaned twice daily with steam. Sputa cups of paper are furnished at night, and paper napkins to be used about the grounds, and they must be returned to be burned. Bedding and laundry are steam treated. When a patient leaves a room it is disinfected by washing walls, floors, woodwork, and furniture with a bichloride solution. The room is similarly treated

every week while occupied. The patient is instructed and watched in regard to the danger from dried sputum or contact with it in any state. The rules are strict *and are enforced.* He who will not abide by them must leave. Patients quickly fall into the new method and use every precaution possible. When this is carried out, I believe the danger to those residing in the sanitarium and those attending to the patients is reduced to a minimum.

I can recall no instance in which tuberculosis was developed either in the immediate family of the managers or among the numerous friends and relatives who were constantly around. The writer himself has no fear of living in a properly conducted institution of this kind, and would not hesitate to again place his family there, so far as infection is concerned. In fact, if I were going South to spend the winter I should feel safer in some such place than I should in a hotel where I was confident that, while the place appeared clean, the building was truly a hothouse swarming in bacteria galore.

Send those who can afford it to a properly managed institution. Instruct and exact more care from those who can not go. The time is not far off when each State will consider this question, taking care of the poor and needy in places established for that purpose.

We hear and read of cholera in the far East, and, were it here, should not hesitate to exact laws compelling restriction, simply because it is a rapid and fatal disease. It is a question if more do not die each year in our country from tuberculosis than die of cholera in the East.

We are wide awake to the mistakes of our neighbors, but blind to our own.

No. 111 North Cleveland Avenue.

THE TREATMENT OF SUPPURATING GLANDS

BY RADICAL REMOVAL, BORIC-ACID PACKING, AND IMMEDIATE SUTURING OF THE WOUND.

By JAMES R. YOCOM, M. D.,
TACOMA, WASHINGTON.

Suppurative adenitis, especially the "bubo," is one of the diseases most often met with in the surgical service of general and marine hospitals in seaport towns; the treatment is often tedious to both surgeon and patient, and the long stay in the hospital and loss of service very annoying to the patient's master and employer; the result seems to them to be dearly bought at the expense of so much time, trouble, and money.

This is my excuse for presenting a method of treating these cases which, except for the above-mentioned reasons, would be of trifling importance.

The essential and (so far as I know) new feature of the method was first tried by me in February, 1895, at the suggestion of George Smith, the very efficient head nurse and surgical dresser of the Fannie C. Paddock Memorial Hospital of Tacoma. The result in this case was satisfactory, and I followed it in the four or five similar cases of my month's service. The results were so uniformly good that my colleagues of the staff willingly tried the same plan in their successive services. Thus, since my first case in February about ten cases have been similarly treated, and in all in which the method has been fully carried out uniformly good results have been obtained, so that I now feel fully warranted in recommending the method, at least for more general trial.

The method is as follows: After the usual preparation for operation the inflamed gland is cut down upon and is either dissected out intact or is removed, together with all the surrounding necrotic tissue, by the sharp curette; the removal of this dead and dying tissue must be as thorough and radical as possible. The cavity is irrigated with *hot* sterile water and packed for a few moments with hot, moist, sterile gauze to remove loose *débris* and check oozing; these few moments are used to cut away any necrotic or suspicious-looking skin along the incision; the gauze packing is removed and the whole cavity is not powdered, but packed, and *packed full*, with powdered boric acid (C. P.). The incision is immediately closed throughout by interrupted suture; no drainage is needed, except in neglected cases, in which operation has been so long delayed that an unusually great loss of tissue has resulted; in such a few strands of non-absorbable suture drain is placed in the end of the skin wound to be removed after twenty-four to forty-eight hours; but, I repeat, this is only necessary in very exceptional, grossly neglected cases, in which, after curetting, there is left a cavity as large as a duck egg; in every other case, after thoroughly curetting and packing with pure boric acid, it is safe and proper to close the skin wound throughout—as would be done in any clean operation on an uninfected region.

The surface about the incision is dusted with boric acid to prevent the dressing from sticking, and decidedly firm pressure is applied by a well-graduated compress of sterile gauze under a snug, evenly laid spica bandage.

In every case so far the result has been complete union, perfect cure, and discharge from the hospital in from four to twelve days, to the surprise and gratification of the sailor patient and his captain, and with credit to the hospital and surgeon.

The first essential point, and one which is now generally recognized, is as thorough removal as possible of all dead and dying tissue; the second, and to me new, point is the packing of the cavity thoroughly, from bottom to top, with pure boric acid, which makes possible the safe and immediate closure of the incision without drainage.

I will add incidentally that in three cases the same method has been followed in treating wounds after removing tuberculous glands; all healed solidly and perfectly, and the patients were discharged in eight to ten days. In a fourth case the addition of a small amount of iodoform to the boric acid seemed to be of no advantage.

The State Board of Medical Examiners of New Jersey.—Dr. E. L. B. Godfrey, of Camden, has been elected secretary, to succeed Dr. William Perry Watson, of Jersey City, who resigned to accept the office of medical supervisor of the Prudential Insurance Co., of Newark.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co.
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, JANUARY 11, 1896.

THE URIC-ACID THEORY OF GOUT AND RHEUMATISM.

We have rarely encountered such unfaltering belief in this theory as is expressed in an article by Dr. Alexander Haig, published in the *British Medical Journal* for December 28th. The author intimates that failure to comprehend the invariable connection between the precipitation of uric acid into the tissues, on the one hand, and a rheumatic or gouty inflammation of those tissues, on the other hand, is as much due to preconceived ideas and ignorance of the chemistry of uric acid as was the ancients' ignorance of the earth's motion and of the circulation of the blood. He makes bold to say that every drug that has ever been used with benefit in acute rheumatism in the past and every drug still to be discovered that may be used with benefit in the future will be found to do good in direct proportion to its power of dissolving and eliminating uric acid. Once these simple facts about the causation of rheumatism are generally recognized, he adds, its prevention will be so simple and so certain that the disease will soon become quite a rare one.

Heat and cold, according to Dr. Haig, influence rheumatism by their effect on the uric acid in the system. "What is the effect," he asks, "of going out and getting hot?" It produces, he answers, "a fall in the acidity of the urine, or, to put it more correctly, a fall in the hourly excretion of acid in the urine . . . that is to say, getting hot is equivalent to a dose of alkali." The case is cited of a man who felt the heat very much on the Red Sea, on a voyage from England to India, and then in Bombay was exposed to comparatively cold March winds, and had a violent attack of gout. Dr. Haig thinks nothing can be simpler than the explanation of this history. "We have," he says, "(1) the ingestion of a lot of uric acid, (2) its solution in the blood (uric acidæmia) as the result of heat, and (3) its precipitation on the joints by the rising acidity produced by cold winds."

Dr. Haig gives brief accounts of some cases in which arthritis and endocarditis were produced by drugs which diminish the solvent power of the blood for uric acid. Among the drugs to which this action is attributed are potassium citrate, ammonia, lactic acid, arsenic, and digitalis. If we understand him right, he explains this effect of potassium citrate on a theory that "when arthritic pains are being relieved by a salicylate it will make them worse to add potash, and, conversely, when arthritic pains are being relieved by potash it will do harm to add a salicylate." Ammonia owes its injurious action to the fact that the ammonium salt of uric acid is one of the more insoluble urates. Lactic acid acts like any other acid that is absorbed and affects the alkalinity of the blood. Arsenic, so long as it does not upset digestion, causes a diminished excretion of uric acid in the urine. Digitalis, Dr. Haig thinks, may play a part in causing endocarditis by putting "extra pressure and strain" on the valves of the left side of the heart.

MINOR PARAGRAPHS.

DUBOISINE AS A HYPNOTIC AND MOTOR SEDATIVE.

At a recent meeting of the Society of Neuropathology and Psychiatry of the University of Kasan (*Deutsche Medizinal-Zeitung*, December 23, 1895) Dr. Skuridin related his experience with duboisine in various forms of psychical disturbance. Besides its hypnotic effect, he had noted its sedative action in cases of motor excitement. He had used it subcutaneously in doses ranging from 0·0075 to 0·015 of a grain. As the result of 360 injections given to twenty-one patients, sleep lasting for six hours had occurred in 153 instances, sleep lasting between four and six hours in 126 instances, sleep lasting less than four hours in 62 instances, and failure in 19 instances. The remedy seems to have acted most favorably in epilepsy, periodical psychosis, and mania. The author considers the hypnotic effect of the drug as secondary to its action as a motor sedative, for he has not found it appreciably if at all useful in sleeplessness depending on delirium, organic diseases of the brain, etc.

NEW JOURNALS.

Among the initial numbers that have recently been received at this office are that of the *Cleveland Journal of Medicine* and that of *Langsdale's Lancet*. Each of the new journals is a monthly. The first-mentioned of them is the official journal of the Cleveland Medical Society. The first number contains forty-four pages of reading matter. The editors and proprietors are Dr. Henry S. Upson and Dr. P. Maxwell Foshay. The other journal, owned and edited by Dr. John M. Langsdale, is published in Kansas City. All the original contributions given in the first number are by New York authors. It seems that its name was given to it by Dr. I. N. Love, of St. Louis, and Dr. Langsdale consented "in an unguarded moment." The *Lancet* has forty pages of reading matter.

ACUTE NEPHRITIS IN CONNECTION WITH ECZEMA.

Bruhns (*Berliner klinische Wochenschrift*, 1895, No. 28; *Centralblatt für innere Medicin*, December 21, 1895) has observed seven cases of acute nephritis some of which certainly, and the others most probably, depended on eczema and not on any drugs that were used. In some of the cases the eczema was primary, and in others it was consequent on scabies. As to the way in which eczema gives rise to nephritis, he remarks, we are as yet utterly in the dark; it may be that it is by virtue of an idiosyncrasy on the part of the patient. Many persons affected with eczema of the entire skin escape renal trouble, while others in whom the cutaneous disease is far less extensive are attacked with nephritis.

ITEMS, ETC.

The Albany Medical College Alumni Association of Greater New York will hold its first annual dinner at the Savoy Hotel on Thursday evening, the 16th inst., at six

o'clock. Dr. Vander Veer, Dr. Ward, and Dr. Boyd, of Albany, the Hon. John S. Wise, of Virginia, Dr. William H. Thomson, Dr. Horace T. Hanks, and Dr. Andrew H. Smith, of New York, and the Rev. Dr. A. V. Raymond, of Union College, are expected to be among the speakers.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending January 7, 1896:

DISEASES.	Week ending Dec. 31.		Week ending Jan. 7.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	23	3	8	1
Scarlet fever	135	10	119	11
Cerebro-spinal meningitis	0	0	1	1
Measles	291	19	267	11
Diphtheria	289	38	273	29
Small-pox	0	*0	0	0
Tuberculosis	52	109	128	106

The New York Public Library.—It is announced that Dr. John S. Billings has been appointed superintendent of the library, which comprises the Astor, Lenox, and Tilden foundations.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from December 29, 1895, to January 4, 1896:*

WORTHINGTON, JAMES C., Major and Surgeon. The leave of absence granted him on surgeon's certificate of disability is extended six months on account of sickness.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending January 4, 1896:*

GUEST, M. S., and BAGG, C. P., Assistant Surgeons. Ordered to examination for promotion.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the Sixteen days ending December 31, 1895:*

CARTER, H. R., Surgeon. Granted leave of absence for twelve days. December 17, 1895.

WILLIAMS, L. L., Passed Assistant Surgeon. Granted leave of absence for fifteen days. December 30, 1895.

MCINTOSH, W. P., Passed Assistant Surgeon. To proceed from Boston, Mass., to Louisville, Ky., and assume command of service. December 28, 1895.

BROWN, B. W., Passed Assistant Surgeon. Granted leave of absence for nine days. December 17, 1895.

PROCHAZKA, EMIL, Assistant Surgeon. To proceed from Buffalo, N. Y., to Detroit, Mich., for duty. December 28, 1895.

THOMAS, A. R., Assistant Surgeon. To proceed from St. Louis, Mo., to Boston, Mass., for duty. December 28, 1895.

CUMMING, H. S., Assistant Surgeon. Granted leave of absence for sixteen days. December 16, 1895. Leave of absence extended four days. December 26, 1895.

Boards Convened.

Board to revise regulations regarding uniforms: Surgeon FAIRFAX IRWIN (chairman), Passed Assistant Surgeon C. E. BANKS, and Passed Assistant Surgeon B. W. BROWN (recorder). December 17, 1895.

Board for the examination of officers for promotion and candidates for admission to the service, to meet in Washington, D. C., February 10, 1896: Surgeon GEORGE PURVIANCE (chairman), Surgeon H. W. AUSTIN, and Surgeon H. R. CARTER (recorder). December 30, 1895.

Society Meetings for the Coming Week:

MONDAY, *January 13th:* New York Ophthalmological Society (private); New York Academy of Medicine (Section in General Surgery); New York Medico-historical Society (private); New York Academy of Sciences (Section in Chemistry and Technology); Lenox Medical and Surgical Society, New York (private); Boston Society for Medical Improvement (annual); Gynæcological Society of Boston; Maine Academy of Medicine (Portland); Microscopical Club of the Buffalo Society of Natural Sciences; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private).

TUESDAY, *January 14th:* New York Academy of Medicine (Section in Genito-urinary Surgery); New York Medical Union (private); Kings County, N. Y., Medical Association; Medical Societies of the Counties of Broome (quarterly—Binghamton), Chautauqua (semi-annual—Jamestown), Chenango (annual), Clinton (annual—Plattsburgh), Erie (annual—Buffalo), Genesee (semi-annual—Batavia), Greene (quarterly), Jefferson (annual—Watertown), Livingston (semi-annual), Madison (semi-annual), Oneida (quarterly—Utica), Ontario, Oswego (semi-annual—Oswego), Rensselaer (annual), St. Lawrence (annual), Schenectady (annual—Schenectady), Schuyler (annual), Steuben (semi-annual), Tioga (annual—Owego), Wayne (semi-annual), and Yates (semi-annual), N. Y.; Newark (private—election) and Trenton, N. J., Medical Associations; Clinical Society of the Elizabeth, N. J., General Hospital and Dispensary; Northwestern Medical Society of Philadelphia; Practitioner's Club, Richmond, Ky.

WEDNESDAY, *January 15th:* Medico-legal Society, New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark); Philadelphia County Medical Society.

THURSDAY, *January 16th:* New York Academy of Medicine; Brooklyn Surgical Society; New Bedford, Mass., Society for Medical Improvement (private).

FRIDAY, *January 17th:* New York Academy of Medicine (Section in Orthopædic Surgery); Brooklyn Medical Society; Baltimore Clinical Society; Chicago Gynæcological Society.

SATURDAY, *January 18th:* Clinical Society of the New York Post-graduate Medical School and Hospital.

Births, Marriages, and Deaths.

Married.

FULCHER—CARMAN.—In New York, on Wednesday, January 1st, Mr. Charles A. Fulcher and Miss Virginia B. Carman, daughter of Dr. R. A. Carman.

Died.

ANWAY.—In Chicago, on Friday, December 27th, Mrs. Jane Phelps Anway, wife of Dr. Joseph D. Anway.

Goddard.—In Rochester, N. Y., on Sunday, January 5th, Edith, daughter of Dr. Frederick Goddard.

Meyer.—In Charleston, S. C., on Tuesday, December 31st, Dr. Charles Laney Meyer, in the sixty-ninth year of his age.

Hollingsworth.—In Chapel Hill, Miss., on Wednesday, December 25th, Dr. I. N. Hollingsworth.

Throckmorton.—In Houston, Texas, on Saturday, December 28th, Dr. John A. Throckmorton, in the seventy-fifth year of his age.

Letters to the Editor.

THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

New York, *January 6, 1896.*

To the Editor of the New York Medical Journal:

Sir: I have read your leader of January 4th, founded on an editorial which appeared in the New York *Sun* of December 31st. I am very sorry that the *Medical Journal* did not wait until the response from our institution to the criticisms of that editorial was made. On January 5th the *Sun* printed in an obscure place a part of the answer which the directors of the institution made to the attack upon them in that influential journal. Had they published the whole of my reply, I should not have troubled you with this letter, but, as they did not, I beg that you will allow me the hospitality of your columns, while I give in full the answer to their and your strictures upon our claim to be a charity entirely worthy of the consideration of the corporation of the city of New York. If the *Medical Journal* had waited for the reply of the Post-graduate Hospital, it would have found that it was an error to state that the Legislature ever voted to give us a dollar a day for babies supported in the Babies' Wards. What the Legislature did vote was thirty-eight cents a day, and that has been received for the space of twenty-one months. Neither is your understanding correct that the hospital has ever drawn $8,000 annually, or will draw $8,000 necessarily, from that fund. It will draw whatever is expended at thirty-eight cents a day for each patient who is treated absolutely without charge, and without regard to his or her curability, if it is not a contagious case.

It is true that the Legislature voted, after a very careful consideration of our reports and of our position as a charity, to authorize the corporation of the city of New York, in a law which received the intelligent sanction of the Mayor and of the Governor after a hearing, to give us $30,000 annually for our charitable purposes. Our claim before the Board of Estimate and Apportionment was that the intention of the Legislature was to give us the appropriation for the year 1895 as well as for the year 1896, but we acquiesced in the opinion of the Corporation Counsel that this intention could not be legally carried out.

Another error of the *Sun* editorial, which the *Journal* has assumed to be correct, without any inquiry of the managers of the Post-graduate Medical School and Hospital, is that we have forty private rooms in the Post-graduate Hospital. As a matter of fact we have thirteen. It is hardly necessary to tell a medical journal that private rooms do not diminish the claims that the hospital which has them does charitable work. They are, as I said in that part of my letter to the *Sun* which was printed, founded for the purpose, in our hospital at least, of enabling us to make some money to be used for the free care of patients unable to pay anything. If the patients were not received in these private rooms, they would go to others. The doctors, although the *Sun* editorial apparently insinuated that it was different, are only incidentally benefited. But the managers of the Post-graduate Medical School and Hospital take issue with the *Journal* and the *Sun* in the assumption that we are entitled to receive money only for charity, because we take care of just so many patients. We would take care of many more had we the money. We believe that the State of New York would do very well to give us a large grant of money, as years ago they did to certain medical colleges and to the New York Hospital, all of them private institutions. The State of Pennsylvania gives annual sums to its medical colleges now. We think this money could well be given, because we and the Polyclinic are doing a great benefit to the city of New York by bringing a large number of medical men to study here who else would not appear at all. The city of New York has furnished one medical college with a building, for which the city receives rent, but which was erected at the cost of the municipality. Certainly the Polyclinic and the Post-graduate Medical School would have been relieved of their greatest burdens if the city had built them a building for their medical schools and then given it to them for a moderate rent. The fact that this service to New York city is done without salaries to the teachers seems to us another reason why the State should assist us in establishing our great plant. If the day ever comes when any kind of pecuniary reward can be given to the professors and instructors of the Post-graduate Medical School by the directors, they will ask nothing from the city or the State, but they will still solicit funds for the hospital and dispensary by private subscription only; but under the present condition of things they intend to use every means in their power to convince the Legislature and the Board of Estimate and Apportionment that not only their dispensary and their hospital, but also their medical school, are deserving of aid from the public treasury. I think the founders and maintainers of the Post-graduate School ought to receive the encouragement of the medical profession. Attacks upon our sincerity of motive and our truthful claims for aid, made in secular journals, ought at least not to be concurred in by the medical press until we have had a chance to reply. I fearlessly ask the strictest investigations of our objects and our methods.

D. B. St. John Roosa, M. D.,
President, Post-graduate Medical School and Hospital.

THE GAUZE SPONGE.

Dayton, Ohio, *December 26, 1895.*

To the Editor of the New York Medical Journal:

Sir: The character of the surgical work done in the United Kingdom, as shown in the *British Medical Journal*, is generally of a high order, yet in much reading of this weekly one is occasionally struck by the fact that surgeons there are distinctly oblivious to many small points of progress on the continent or in America. Showing this is Dr. Jane Henderson's mention of gauze sponges in the American Notes by a Visitor, reprinted in your issue of December 7th. That she should mention them at all shows they were novel to her; but, more than that, she could not have been acquainted with probably the most perfect method of operative work, the *dry aseptic* method (see the *American Journal of the Medical Sciences*, June, 1893). The value of the gauze sponge is not in its cleanliness or in its cheapness, but in the fact that

it permits the discarding of all fluid from the operating table and stands. J. C. Reeve, Jr., Ph. D., M. D.

THE DANGERS OF AMYGDALOTOMY.

79 West Forty-seventh Street, New York, *December 28, 1895.*

To the Editor of the New York Medical Journal:

Sir: May I be permitted to call attention to an accident in the removal of the tonsils which I have never seen mentioned?

Some forty years ago the tonsils were removed in two cases by the same physician. One of the patients, a man about twenty-five years old, was never able to speak above a hoarse whisper for fifteen years, when death occurred from other causes.

The other was a man of about forty who had the same disability, but could occasionally speak a word or two in the natural voice, but never a sentence. Then the hoarse whisper became permanent and so remained at eighty years of age, the last I knew of him.

I do not know whether the operation was done with the knife or with the amygdalotome, but as a boy I remember both cases well. The operation was simply for enlarged tonsils, and no mention was ever made of the removal of any growth, benign or other, either by the physician or by the patients.

In the discussion published in your issue of November 16th several speakers mention personal experiences of dangerous hæmorrhage. It is worthy of note that in no case did death occur. Mackenzie operated over 12,000 times, Ellsberg over 2,000 times, another over 5,000 times, without a death, but sometimes with serious hæmorrhage.

Some years ago Delavan made the statement that there was no authentic case of actual death in the practice of modern surgeons with modern methods in the removal of the tonsils.

This presupposes that every possible precaution shall be used, and yet must not obscure the fact that a severe or dangerous hæmorrhage may occur in any case.

J. L. Perry, M. D.

Proceedings of Societies.

SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL.

Meeting of November 6, 1895.

The President, Dr. Parker Syms, in the Chair.

(Concluded from vol. lxii, page 801.)

A Case in which Laparotomy was Performed for Intestinal Perforation occurring in the Course of Typhoid Fever.—Dr. L. W. Hotchkiss presented the report of such a case. (See page 43.)

Meningocele.—Dr. H. V. Wildman presented a case of what appeared to be meningocele. The patient, a young woman, complained of pain over both eyes and of dizziness when the tumor was manipulated. It was stated by her that the swelling had been first noticed when she was a few months old, and that it had almost doubled in size in the past six months.

Dr. W. J. Chandler, of South Orange, N. J., said that four or five months before he had seen a child upon whom a number of unsuccessful tenotomies had been done for the relief of clubfoot. He had operated upon the child, removing a large bony section from the os calcis and some bone also from the cuboid and scaphoid. The result had been satisfactory.

Dr. Sayre said that the result obtained by Dr. Syms was good, but the foot could not be brought quite up to a right angle. If a wedge-shaped piece of bone was taken out of the tibia and fibula, just above the malleoli, it was probable that the gait would be still further improved. Possibly the equinus could be corrected in a measure by plaster-of-Paris dressings and wedging.

The President said that since the operation he had not seen the patient until a few days ago, and that then he also had felt that further correction was desirable.

Dr. E. Le Fevre, referring to the case of laparotomy for perforating typhoid ulcer, said that while the only hope after perforation of a typhoid ulcer seemed to be an immediate laparotomy, the outlook was rather dismal. In nearly all inflammatory diseases associated with ulceration there was apt to be some protecting process going on, but in typhoid fever there was usually extreme infiltration of the gut and an intense tympanites. He did not mean to say that the operation was not justifiable, but that the prognosis was extremely grave. The trouble was the danger of secondary perforation of neighboring ulcers. It had been maintained that the ulcers sometimes closed spontaneously, but he was compelled to confess to great skepticism on this point.

The President said that in such cases the question seemed to be not so much one of suturing the intestine, as one of resection of the bowel and suture by Maunsell's method.

Dr. Hotchkiss said that to him it seemed to be not so much a question of what to do after opening the abdomen, as to operate sufficiently early—*i. e.*, before the establishment of septic peritonitis. From his experience in this one case he would not be inclined to adopt the suggestion offered by the president except in selected cases. It seemed to him much safer generally to isolate the diseased area by gauze packing between the intestinal coils, after suturing the perforation, than to attempt a resection of the gut, unless the condition seemed to especially demand it.

Dr. Le Fevre referred to a case of subphrenic abscess. A boy of thirteen years, after falling across an iron girder, had begun to suffer pain in the region of the liver. Chills and a septic temperature had soon developed. After seventy-two hours the pleura had become involved. After about a week a puncture had been made, but no pus had been found. After the tenth day an area of bronchial breathing had appeared at the base of the lung in the axillary line. A few days later there had been quite free hæmorrhage, followed by the expectoration of a considerable quantity of pus. No streptococci or staphylococci had been found, but large numbers of bacilli communes coli, showing that a subphrenic abscess had perforated through the lung. Another case seen in the hospital had given almost the same history, except the absence of traumatism. In neither one had there been any signs directly over the liver indicating the advisability of puncture or incision. In still another case, supposed to be one of typhoid fever, it had been found at the autopsy to be one of subphrenic abscess. Where the abscess was located anteriorly the case would pursue a course similar to that seen in Dr. Gibbs's case.

Dr. Louis A. de Zerega recalled the case of a child seen in the hospital. The child had been operated upon for empyema and discharged "cured." Nine months later it had re-entered the hospital much emaciated and complaining of abdominal pain. There had been a pointing of the abdominal wall on the right side at this time, and on incising this an abscess had been found between the upper surface of the

liver and the diaphragm holding six or eight ounces. Recovery had been fairly rapid.

Dr. G. D. Stewart recalled a case occurring in a truck driver, who had received what had been supposed to be a fracture of a rib. On his coming to the hospital no evidence of such a fracture had been found, but just below the costal arch and just to the left of the dividing line between the right hypochondriac and lumbar regions there had been deep œdema. On the introduction of a needle pus had been withdrawn. The house surgeon had been allowed to open the abscess and consequently the exact anatomical relations of the abscess had not been noted.

Dr. Gibbs said that in the case of abscess he had just reported the origin might have been in the kidney, or indeed in any part of the abdomen, for the abscess cavity was enormous. The adhesions within the abscess had been so thick that it had not seemed to him prudent to palpate it vigorously.

The President said that he had had occasion to look up the subject of meningocele, and had found that most of the cases were curable by operation. The only cases in which the operation was not justifiable were those in which there was a protrusion of the brain substance. The operation was not to be dreaded as in the preantiseptic period; exploratory incision was safe, and if the brain was found to protrude the sac could be closed.

Only Nervous.—Dr. Herman Canfield read a paper with this title. (See page 44.)

Dr. Allen Fitch said that he had had a large experience with "the only nervous," among all grades from primary dementia to senile dementia, and from meningitis to hysteria. He recalled two illustrative cases; one had been managed successfully, and the other not. The first had been that of a young woman whose father had been ill for a long time with cancer of the stomach, and the family had been greatly worried in caring for him. This young woman had become sleepless, and had finally conceived the idea that she too was suffering from cancer of the stomach. It had been advised, and very properly, that she should be sent away from her friends. With a change of scene and some simple treatment recovery had followed in a short time. The other case had been that of a relative in the same family—a maternal uncle—a very prominent architect in New York. He had worked very hard all winter, and added to this had been worried much at home. He had finally got the idea that the foundations of the buildings which were being erected according to his plans were faulty, and he could not rid himself of this delusion in spite of the assurances of competent engineers who had gone carefully over his plans. He had had one delusion after another, and had passed into a condition of simple melancholia. Finally, the family had been prevailed upon to get him away from business and take a European trip. He had eventually made a perfect recovery. The speaker said that the so-called "only nervous" cases were, in his opinion, the most trying of all to the physician.

Dr. Floyd M. Crandall said that he could heartily indorse the statement made in the paper, that work in itself was not productive of nervous affections. The very fact, however, that one had too much to do in a given time was enough to make one nervous. The amount of work in the schools at present was a potent factor in producing nervousness. A generation of nervous people, particularly of nervous girls, was growing up. Babies and children were overstimulated by the methods of training, entertainment, and literature. He had known recently of a theatre party made up of a number of girls between twelve and fifteen years of age, going to see an exciting play. The whole tendency of the modern methods of rearing children, and particularly girls, was to produce highly excitable and nervous individuals.

Dr. Gibbs asked Dr. Canfield whether the rest-cure treatment of Weir Mitchell was embodied in his idea of the proper treatment of these cases.

Dr. Canfield said that three or four years ago he had asked Dr. S. Weir Mitchell if he still thought as much of the rest cure as formerly, and had received the reply that he did not use it so much as at one time. It was a rather limited class in which the full rest cure was satisfactory, although in combination with other methods it was most useful.

Dr. W. Evelyn Porter said that he had met with a number of patients who had been subjected to the rest cure, and with anything but satisfactory results. In most simple cases it was physical exercise that was wanted rather than absolute rest. Most of the nervous women met with in our large cities were nervous because they had too much rest and too little physical exercise. The ideal form of exercise for such individuals was horseback riding, but it was, of course, restricted to the few. Proper bicycle riding, he felt sure, would do much more for these nervous people than any amount of medicine or rest.

Dr. Canfield said that he would like to know how a nervous patient who had been in bed for years, and had been living on a few teaspoonfuls of beef tea, could be put on a horse and made to ride. The trouble with the rest-cure treatment was that it had been ridden as a hobby. These extremely weak, nervous patients should be placed in bed for a few weeks, and then gradually taken out of bed and accustomed to more physical exertion. It was in the beginning that the rest cure was so valuable, but it was of no value unless carried out in its entirety. He certainly agreed with the last speaker in the statement that the majority of nervous women were suffering from lack of exercise. He sometimes refused to do anything for such a patient until she had performed some stipulated work—such as chopping down a tree by spending five minutes a day at it.

Book Notices.

Medical and Surgical Report of the Children's Hospital, Boston. 1869–1894. Edited by T. M. Rotch, M. D., and Herbert L. Burrell, M. D.

To those who are familiar with the Children's Hospital of Boston, its wonderful completeness and efficiency of equipment, its exceedingly varied service, and above all the remarkable *esprit* which prevails among those connected with it, both professionally and otherwise, this report will appear eminently appropriate and in keeping with an institution for which they must have unbounded respect. To those not thus informed the report will be a revelation, for, frankly, we have never had the fortune to see so complete, practical, and artistic a hospital report as is here presented. The report is divided into three parts. The first concerns the administrative department of the hospital, and is historical and descriptive. In it will be found all that pertains to the management of this model institution, and from it the hospital organizer and the executive may derive much benefit. It is well illustrated.

The second is the medical division and consists of a series of papers contributed by members of the medical staff. These concern certain of the medical diseases of childhood, with

more or less intimate connection with the Children's Hospital. The fact that they are not confined to the experiences of that institution exclusively renders them of the greater value and usefulness, while their being based chiefly upon its records makes them suitable introductions. The list of these papers includes those on typhoid fever, on the value of milk laboratories for hospitals, on the relation of an aural service to a children's hospital, on malarial disease in children, on a scarlet fever epidemic, on the ætiology of chorea, and on an epidemic of diphtheria stopped by the use of antitoxine. These papers are excellent and in the highest degree instructive, but of special value is that on chorea.

The third, or surgical, division, however, is incomparable. It opens with a list showing the relative frequency of diseases treated, and this is followed by a chapter of description which concerns the hospital wards, the out-patient department, and the surgical appliance shop. This description is minute; it presents details even to reproductions of the patients' dispensary card, of the history blanks, and of a number of printed directions appropriate to the various apparatus issued; and it shows a method and an attention to detail which are as surprising as they are delightful. Following this are chapters upon each of the surgical diseases of children which have been observed in the hospital. These papers are contributed by the members of the surgical staff, and, though pathology, symptomatology, and diagnosis are not neglected, treatment is their main feature. It is impossible to describe these chapters in detail; even to mention them would demand too much space, but of their quality we can not be too laudatory, and when we say that the illustrations of these chapters are numerous, very good, and generally original, that statistics and percentages are noticeable by their absence and that the text is invariably readable, we have shown, we think, how valuable the work must be—by contrast. The originality which prevails throughout, and especially the cleverness exhibited in many of the mechanical devices, is very noticeable. The surgical division and the volume are concluded with a number of papers of a scope comparable to that of the papers contained in the medical division. These papers are upon Traction in Hip Disease, The Causation of Knock-knee and Bow-legs, Tenotomy in Spastic Paralysis, The Normal Spine, High Temperature in Chronic Joint Disease, and The Treatment of Infantile Clubfoot.

The appearance of the volume is in thorough harmony and keeping with its contents; the paper is good, the type is clear, the margins are wide, the binding is rich, and the illustrations are most excellent. Enthusiasm is pardonable when such a work is its cause, for the report is in every way valuable and unusual, but, despite an admiration which we neither wish nor hope to repress, it is no ebullition which leads us to say that this report will be of interest to all medical men, and to the pædiatrist in particular, while to the orthopædist its interest is incalculable.

Cutaneous Medicine. A Systematic Treatise on the Diseases of the Skin. By Louis A. Duhring, M. D., Professor of Diseases of the Skin in the University of Pennsylvania, etc. Part I, Anatomy of the Skin, Physiology of the Skin, General Symptomatology, General Ætiology, General Pathology, General Diagnosis, General Treatment, General Prognosis. Illustrated. Philadelphia: The J. B. Lippincott Company, 1895. Pp. vii–221.

The author strikes the keynote of his new work with the title *Cutaneous Medicine*, for, as he says, "dermatology, rightly viewed, includes the whole integumentary system, and is a department of general medicine." He justly holds that the skin occupies a more conspicuous place in medicine than has heretofore been accorded to it, and declares that one who would be successful in the treatment of skin diseases must first acquire a full knowledge of the principles of general medicine, and says that without this groundwork his efforts in the vast majority of cases will at best be rewarded by haphazard or unsatisfactory results. Indeed, the treatment of skin diseases is no longer a jugglery with a few symptomatic prescriptions, and nothing indicates it more forcibly than this first volume of a work which in many ways will be a monument, so to speak, in the study of the skin. It is presented in a form which gives every evidence of the author's desire to make it all that has been expected of it, as well on this as on the other side of the Atlantic, where the author enjoys a high reputation, especially in France. Recently a prolific German writer on skin diseases was asked what books would be needful to cover the subject of the skin, and the reply, "*My* book on the pathology, with Kaposi and the coming Duhring on the general subject, will be all-sufficient," was Teutonically magnificent in its praise of the American authority. The subject-matter of the eight chapters given in this volume is of a high standard. The author gives due credit to all original investigators, both in this and in foreign countries, and especially the authors and writers of Great Britain, Germany, and France, whom he has drawn upon freely throughout. The quotation from the work of J. Collins Warren, in the chapter on the Anatomy of the Skin, accounting for the peculiarity of the lesion in carbuncle, is of particular interest. This chapter is especially excellent and covers the ground in the broadest way. The drawings illustrating it are all of the highest grade of work and printed upon separate sheets of somewhat thicker paper than that used in the body of the book. In the chapter on The Physiology of the Skin the various functions, sensibility, secretion, absorption, etc., are all gone into and minutely discussed, with frequent reference to recent writings, and this impresses one that the author is thoroughly *au courant* of his subject. The other chapters are of a general nature, but all interesting and instructive. Discussing food, in the chapter on General Ætiology, a subject on which dermatologists differ so widely, the writer says it is accountable for a number of diseases, and he regards improper quantity and quality of food as conspicuous elements in the causation of diseases of the most diverse nature. This is opposed to the views of the Vienna school. Aside from the subject-matter, this volume is presented in excellent form, with clear, good type, paper a little thin perhaps, but making the book of convenient size and light in weight. Altogether, Part I of *Cutaneous Medicine* leaves nothing to be desired, only the hope that the subsequent parts may not long be delayed, that we may soon have again the pleasure that reviewing this one has afforded.

Practical Uranalysis and Urinary Diagnosis. A Manual for the Use of Physicians, Surgeons, and Students. By Charles W. Purdy, Fellow of the Royal College of Physicians and Surgeons, Kingston, etc. Second Edition. With Numerous Illustrations, including Photo-engravings and Colored Plates. Philadelphia: The F. A. Davis Company. London: F. J. Rebman, 1895. Pp. xviii–357. [Price, $2.50.]

In our issue for November 17, 1894, we gave an extended criticism of the first edition of Dr. Purdy's *Uranalysis* and called attention to its many excellences. Our estimation of it as then expressed has been fully substantiated by the reception which has been accorded to the work, and we con-

gratulate the author upon its well-deserved success. The brief interval which has elapsed between the appearance of the first edition and that of the second, of course, has precluded any great additions to the text, and of alterations few were needed. The present edition, therefore, is different from the first only in the addition of a number of most excellent colored plates and the correction of several minor errors.

A Guide to the Practical Examination of Urine. For the Use of Physicians and Students. By James Tyson, M. D., Professor of Clinical Medicine in the University of Pennsylvania, etc. Ninth Edition, revised and corrected. With a Colored Plate and Wood Engravings. Philadelphia: P. Blakiston, Son, & Co., 1895. Pp. xii–13 to 276. [Price, $1.25.]

The mere announcement of the ninth edition of this work is a sufficient notice of it and more eloquent in its praise than the most extended criticism, for the book is probably more widely and generally known and appreciated than any of its similars in subject and scope. The present edition varies in no material respect from its predecessor and, as no uranalytic advances of moment have recently been made, is therefore in every way what it should be.

Outlines of Practical Physiology; being a Manual for the Physiological Laboratory, including Chemical and Experimental Physiology, with Reference to Practical Medicine. By William Stirling, M. D., Sc. D., Professor in Victoria University, Manchester, etc. Third Edition, revised and enlarged. With Two Hundred and Eighty-nine Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1895. Pp. xvi–402. [Price, $2.]

The third edition of this work is essentially a repetition of the second, but much revision has been done, a number of new illustrations have been inserted, and certain additions have been made, among them an appendix on recording apparatus. The book is in no sense a treatise; it is devoted to demonstration and experimentation; as its subtitle states, it is A Manual for the Physiological Laboratory. Of the subject-matter the arrangement is excellent, the presentation brief and forcible, and the wording clear, terse, and dogmatic.

A Text-book of Physiology. By M. Foster, M. A., M. D., LL. D., F. R. S., Professor of Physiology in the University of Cambridge and Fellow of Trinity College, Cambridge. Sixth American Edition, thoroughly revised, with Notes, Additions, and Two Hundred and Fifty-seven Illustrations. Philadelphia: Lea Brothers & Co., 1895. Pp. 929.

Foster's *Physiology* is too well known to require criticism. The sixth American edition is mainly a literary revision of the fifth, and the result of the care bestowed upon it has been to increase the value of this standard work materially.

BOOKS, ETC., RECEIVED.

The Diseases of Children, Medical and Surgical. By Henry Ashby, M. D. Lond., F. R. C. P., Physician to the General Hospital for Sick Children, Manchester, etc., and G. A. Wright, B. A., M. B. Oxon., F. R. C. S. Eng., Assistant Surgeon to the Manchester Royal Infirmary, etc. Third Edition, edited for American Students by William Perry Northrup, A. M., M. D., Adjunct Professor of Diseases of Children, Bellevue Hospital Medical College, etc. New York, London, and Bombay: Longmans, Green, & Co., 1896. Pp. xxiii–840.

Injuries and Diseases of the Genital and Urinary Organs. By Henry Morris, M. A., M. B. Lond., F. R. C. S., Surgeon to and Lecturer on Surgery at the Middlesex Hospital, etc. With Ninety-seven Illustrations. New York: William Wood & Co., 1895. Pp. xvi–478.

A Handbook of Obstetric Nursing for Nurses, Students, and Mothers. Comprising the Course of Instruction in Obstetric Nursing given to the Pupils of the Training School for Nurses connected with the Woman's Hospital of Philadelphia. By Anna M. Fullerton, M. D., Clinical Professor of Gynæcology in the Woman's Medical College of Pennsylvania. Fourth Revised Edition. Illustrated. Philadelphia: P. Blakiston, Son, & Co., 1895. Pp. xiv–17 to 254. [Price, $1.]

Spectacles and Eyeglasses. Their Forms, Mounting, and Proper Adjustment. By R. J. Phillips, M. D., Ophthalmic Surgeon to the Presbyterian Hospital in Philadelphia, etc. Second Edition, revised. With Forty-nine Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1895. Pp. 105. [Price, $1.]

A Pictorial Atlas of Skin Diseases and Syphilitic Affections in Photo-lithochromes from Models in the Museum of the Saint Louis Hospital, Paris. With Explanatory Woodcuts and Text by Ernest Besnier, Physician to the Saint Louis Hospital, etc.; A. Fournier, Professor of the Faculty of Medicine, etc.; Tenneson, Physician to the Saint Louis Hospital; Hallopeau, Member of the Academy of Medicine, etc., and Du Castel, Physician to the Saint Louis Hospital. With the Co-operation of Henri Feulard, Curator of the Museum, and Léon Jacquet, Secretary of the Dermatological Society of France. Edited and annotated by J. J. Pringle, M. B., F. R. C. P., Assistant Physician to and Physician to the Department for Diseases of the Skin at the Middlesex Hospital, London. London: F. J. Rebman. Philadelphia: W. B. Saunders, 1895. Part I. Pp. 28. [Price, $3, each part.]

Thirty-first Report of the Trustees of the Boston City Hospital. For the Year from February 1, 1894, to January 31, 1895, inclusive.

Practical Urethroscopy. By H. R. Wossidlo, M. D., of Berlin, Germany. [Reprinted from the *Medical Record.*]

Urethroscopy in Chronic Urethritis. The Largest Catheter always. By Ferd. C. Valentine, M. D. [Reprinted from the *Medical Record.*]

Miscellany.

Antiseptics in the Treatment of Infantile Diarrhœa.—The *British Medical Journal* for December 21st publishes an article on this subject by Dr. W. Soltau Fenwick. It has been shown, he says, that, although at birth the contents of the digestive tract are sterile, bacterial infection is brought about within the first twelve hours of life through the medium of the atmospheric air which the infant swallows in large quantities. The various micro-organisms thus introduced into the system thrive and multiply in the mucus and undigested food which soon fill the intestine, and are constantly re-enforced in numbers and diversified in species by the ingestion of contaminated milk or the swallowed secretions of the mouth. The danger which arises from these natural sources of infection, says the author, is greatly increased by the fact that during infant life the gastric juice is incapable of exerting any decided control over microbic growth, owing to its comparative deficiency in free hydrochloric acid. The entrance of undigested and fermenting material into the intestine in-

duces violent peristalsis, with the result that the infant suffers from colic and diarrhœa until the bowel has succeeded in ridding itself of its irritating contents. If proper means are taken, says Dr. Fenwick, to assist Nature and to prevent a recurrence of the disorder, the stools soon resume their normal appearance and perfect recovery ensues. But if these evidences of digestive derangement are overlooked, gastro-intestinal catarrh supervenes. This inflammatory condition probably arises from direct irritation of the mucous membrane of the digestive tract by acid products of fermentation, and since it is always accompanied by a diminution in the secretion of hydrochloric acid, gastric digestion becomes greatly enfeebled, and the various bacteria are afforded an unlimited scope of action. Within a short period of time the intestine becomes affected in a similar manner, and the child begins to lose flesh and strength and to present all the symptoms characteristic of chronic intestinal catarrh. The third and last stage of the disease is marked by a more or less extensive cirrhosis of the mucous membrane of the digestive tract, often associated with the follicular ulceration of the colon. The diarrhœa continues and the stools are largely mixed with mucus or streaked with blood; the marasmus increases, and death finally ensues either from exhaustion or from some nervous phenomena due to the absorption of toxines from the alimentary tract. This sketch of the ætiology of infantile diarrhœa, he says, serves to emphasize three important facts. In the first place the disorder is a direct result of the activity of certain bacteria which produce abnormal fermentations of the food with subsequent inflammation of the stomach and intestines. Secondly, the intestinal derangement is primarily dependent upon gastric indigestion, and hence the symptomatic diarrhœa will not be overcome until the gastric disorder has subsided. Lastly, the prognosis in chronic cases depends upon the extent of the organic changes which have taken place in the digestive organs, and the influence they exert upon the assimilation of the food.

Although the theory of intestinal antisepsis is comparatively modern, says the author, its practice dates from the earliest times. Thus the empirical value of emetics and purgatives in cases of dyspepsia obviously depends upon the fact that these measures serve to rid the system at once of the agents of putrefaction and their products; while in the routine treatment of diarrhœa by such drugs as calomel and subnitrate of bismuth the same unconscious adoption of antiseptic principles may be discerned.

The various antiseptic drugs which are specially adapted for medicinal use can be roughly divided into two classes according as they are soluble or insoluble in water. The first group comprises such substances as carbolic acid, perchloride of mercury, lactic acid, hydrochloric acid, salicylate of sodium, and resorcin. The chief members of the insoluble class are naphthaline, β-naphthol, betol, benzol-naphthol, salol, the salicylates of bismuth and strontium, and calomel. In addition to the question of solubility there exists another and more important distinction between the members of the two classes. The soluble varieties possess germicidal and toxic properties in direct proportion to the dose in which they are administered, and since they are absorbed rapidly from the alimentary tract it is obvious that they can only exert their specific action in the stomach and upper part of the small intestine. The insoluble drugs, on the other hand, remain for the most part unaltered in the stomach, and therefore exert but little influence upon the fermentative processes which occur in that organ. In the intestine, however, the majority of them are subjected to chemical influences by which they are decomposed, with the ultimate production of secondary substances that exhibit both antiseptic and poisonous properties far in excess of the original drug. These latter remedies are accordingly reserved for cases where it is necessary to control bacterial activity in the intestine, and for this purpose they are administered in full doses at short intervals of time.

In the selection of an appropriate drug for a child, says Dr. Fenwick, several factors have to be taken into consideration which in the case of an adult can safely be neglected. Substances which possess a nauseous taste or offensive smell are hardly tolerated by a child even when mixed with an excess of sugar; and hence naphtholine, β-naphthol, and iodoform can seldom be prescribed with success. Again, absorption takes place so readily from the alimentary tract of an infant that it is often impossible to obtain any degree of intestinal antisepsis from the use of perchloride of mercury and the phenol compounds without running great risk of poisoning the patient in the process. Lastly, powders like charcoal, which have to be administered in large bulk in order to produce any effect at all, are obviously inapplicable to the treatment of disease in infants. In the majority of cases, therefore, our choice is limited to the tasteless and comparatively non-toxic powders, such as calomel, benzol-naphthol, and the salicylates of bismuth and strontium, or to the soluble antiseptics like resorcin and the acids. During the last three years, the author states, he has used the various medicinal antiseptics in more than five hundred cases of digestive disorders in children which have come under his notice at the Evelina Hospital and elsewhere. The results which have accrued from their use in cases of infantile diarrhœa have been so satisfactory that for more than twelve months he has never once had occasion to resort either to astringent drugs or to opium, while in almost every instance where these latter remedies had been previously tried without effect the substitution of an antiseptic has at once been followed by complete success. Acute dyspepsia is readily cured by dietetic treatment combined with the use of castor oil or an emetic. Antiseptics are only necessary when the disorder has already continued for several days, and has resisted the simpler methods. Under these conditions calomel is of the utmost value when administered in doses of from a sixth to a third of a grain every three or four hours. Hydrochloric acid has been extolled by many authorities, but, he says, according to his experience, the mineral acid more often does harm than good. It is most serviceable when all acute symptoms have subsided, and the child is suffering from weak digestion as the result of catarrhal process. It may then be combined with pepsin with great advantage.

It is in cases of chronic diarrhœa due to fermentation that the systematic employment of antiseptic drugs proves of the greatest value; and for this purpose the insoluble substances which act exclusively upon the intestine are usually recommended. This, however, is a mistake. The disorder always commences in the stomach, and is most easily controlled by carbolic acid for this purpose in all cases of infantile diarrhœa, but its hot taste and unpleasant smell, as well as the occasional occurrence of carboluria, has made the author substitute resorcin, which has the advantage of being extremely palatable to children; it is, he adds, devoid of toxic properties when given in ordinary doses, and very inexpensive. According to the *Pharmacopœia*, the dose of resorcin is from one to five grains, and it is probably on account of these insufficient doses that the value of the remedy has been so much overlooked. As a matter of fact, the drug produces no ill effects in an adult unless the dose exceeds a drachm, and he has long been accustomed to prescribe three grains

every four hours to infants only a few weeks old without the least ill effect.

In cases of diarrhœa, he says, the first effect of the drug is usually noticeable after the third or fourth dose, when the motions decrease in frequency and in amount, the dejecta at the same time acquiring a more natural appearance and losing their excessive fœtor. At the end of the second day the diarrhœa has generally ceased, and is not infrequently replaced by obstinate constipation. In a hundred and twenty cases of intestinal dyspepsia in infants and young children this treatment was used with the following results: In fifty-three per cent. the disorder had lasted from one to two weeks, in thirty-four per cent. from two to four weeks, in ten per cent. from four to eight weeks, and in the remaining three per cent. for a period of more than two months. Out of the entire number, he says, in only nine instances did the diarrhœa continue after the treatment had been pursued for a week, the majority ceasing within three days. Of these nine refractory cases two were instances of cholera infantum, in both of which the patients succumbed within a short time after being brought to the hospital; in one case tuberculous ulceration of the intestine was found to exist after death, while in the remaining six, most of which were very chronic in their nature, the patients were rapidly cured as soon as benzo-naphthol or salicylate of bismuth were added to the original mixture. These results, says Dr. Fenwick, go to prove that when given in sufficient quantity resorcin constitutes a reliable remedy in cases of infantile diarrhœa arising from fermentative processes in the stomach and intestine. When, however, the disorder has lasted for a long time and follicular ulceration of the large intestine exists, the drug may be advantageously supplemented by those remedies which exert their antiseptic properties in the intestine. Benzol-naphthol is particularly valuable in this connection, since it is but slightly toxic, but in order to prove effective it must be given in full doses at short intervals. In some cases where the symptoms were obstinate he has prescribed as much as forty grains to a child during the course of twenty-four hours with only the most excellent results. His experience with the most recent antiseptic, salicylate of strontium, has not been altogether satisfactory, and he says that he has been unable to convince himself that it possesses any superior advantages over the corresponding salt of bismuth.

The Surgical Treatment of Malignant Disease of the Breast.—In an article on this subject, published in the *Lancet* for December 21st, Dr. Robert Sanderson, of the Women's Hospital, Brighton, says that it has become an acknowledged principle of the treatment not only that should the whole affected mamma be freely and thoroughly excised, but that in addition a clean sweep should be made of its lymphatic connections. It is unnecessary, he says, to enumerate the pathological considerations which have led to the adoption of this principle, but it is very necessary to examine the question as to how far the principle has been applied to the practice now employed.

First, as regards anatomy. It is a matter of fact that efferent lymphatic vessels run from the axillary glands through the apex of the axilla into the posterior triangle, and after forming connections with the glands therein finally enter the thoracic duct on the left side and the right thoracic duct on the right side. Moreover, superficial lymphatics from the skin covering the mamma track up over the clavicle to these same glands in the posterior triangle.

It is laid down, says the author, that in primary malignant disease of the breast the axilla should be cleared out (after removal of the breast), whether the glands are visibly infected or not. Why? Because the fact that they are not affected macroscopically is no proof that they are not affected microscopically. And yet, in the face of the anatomical facts quoted above, it is not the usual custom or practice to go further. If it is wrong, he says, to assume that the axilla is free from disease because it shows no sign to the naked eye or to the finger, it is equally wrong to assume that the posterior triangle has escaped. If it is right and peremptory to clear the axilla, it is also right and peremptory to clear the posterior triangle. Still more is it inconceivable how the triangle can be left untouched if the axillary glands are found to be clearly affected at the time of operation.

It may possibly be objected that it is not feasible or is difficult to clear the posterior triangle. To this it can be replied that by a flap operation done a week or ten days after the primary operation a clean dissection can be made of the whole posterior triangle, that it is not difficult, and that it is quite feasible. A flap formed by a long incision down the sterno-mastoid muscle meeting an incision along the clavicle is detached as far back as the anterior border of the trapezius; this exposes the triangle, and the contents can be systematically removed with a little care and patience. By such means the acknowledged principle would be carried out as far as is possible, and if the principle is right it seems incumbent upon the surgeon to strive to apply it thoroughly in practice and not to be content with stopping halfway. It is not suggested that this is the best method of operating, and inasmuch as two cases only have been so treated, and those comparatively recently, no results of value can be produced. It is hoped, however, says Dr. Sanderson, that this article will serve to ventilate the question, as well as to point out that at present the practice appears to directly clash with the acknowledged principle.

In an editorial in the same journal the writer says, in regard to the question raised as to whether it is right to stop the clearing-out process at the axilla, that Dr. Sanderson very rightly pleads that we must also consider the posterior triangle. It is important to remember that lymphatic glands may be affected by carcinoma either directly or indirectly. The glands which receive lymph directly from the infected area enlarge first, but it is only at a later period that other glands, through which the lymph has afterward to pass, become involved. In carcinoma of the breast the lymphatic glands which are most frequently affected are those in the axilla, especially the pectoral set lying under the border of the pectoralis minor. Later in the case glands higher up, situated in the posterior triangle, become also involved. It is extremely rare, says the writer, for the glands above the clavicle to be affected directly. In every case of carcinoma of the breast, in order to reduce the chance of recurrence to a minimum, the axilla should be cleared, even if no enlarged glands can be felt. But if there is no evident involvement of the axillary glands, there is practically no chance that the glands in the posterior triangle are affected; so that it is undesirable to subject the patient to the increased risk of this extension of the operation. But if the axillary glands are markedly involved there is very great probability that the glands above the clavicle are also affected; in such a case there is no reasonable chance of cure unless these glands also are removed. The superficial glands lying on the cervical fascia can be readily taken away, but it is no easy matter to remove the deeper glands which lie around the subclavian vessels and under cover of the clavicle, and these deeper glands are those most likely to be affected. Yet, he says, it is undoubtedly advisable to attempt their removal in many

cases where they are now left untouched. But the axillary and the supraclavicular glands are not the only lymphatic glands connected with the breast; the lymphatics of the inner segment of the breast run to the sternal glands in the anterior mediastinum, and it is greatly owing to the fact that carcinoma of the breast usually affects the upper and outer segment of the breast that these intrathoracic glands are so rarely involved.

Higher Medical Education.—We have been favored with advance sheets of the chapter on Medical Education, by Dr. A. Erskine Miller, of the *Report of the Commissioner* of Education. The chapter includes the following article on Higher Medical Education, by Dr. William H. Welch, of the Johns Hopkins University, reprinted from the *Western Reserve Medical Journal:*

The time has come when the need of medical education should be brought forcibly before the general public in this country. Medicine can no longer be taught with the simple appliances of former times. The proper teaching of medicine now requires hospitals, many laboratories with an expensive equipment, and a large force of teachers, some of whom must be paid enough to enable them to devote their whole time to teaching and investigating. These things require large endowments of money, and can not be adequately secured simply from the fees of students. If the public desires good physicians it must help to make them.

In this country, for the most part, we can not look to the State for endowment of medical education, but we must appeal to private beneficence. A few public-spirited and generous men and women have already given practical proof of their appreciation of these facts. With more general and fuller realization of the needs and present condition of medical education, and of the results which can be secured by its liberal endowment, there is every reason to believe that these benefactions will be largely and rapidly increased, and that thereby the condition of medical education in this country shall cease to be a reproach to us. During the last few years our methods and standards of medical teaching have shown remarkable improvement. . . . What preparation should a student bring to the study of medicine? It is highly desirable, in my judgment, that he should be liberally educated—that is, that he should possess a degree in arts or science which shall be an index of that knowledge and culture which, apart from any immediate bearing upon professional studies, are recognized as entitling their possessor to be ranked among liberally educated men. Scientific studies have acquired the right to rank with classical studies in affording this liberal culture, but the humanities should have a fair share of attention at this period of education.

The question has been discussed whether or not during the period of collegiate education the student who intends to study medicine should be required to pursue any special subjects, and especially such as bear a direct relation to his future professional studies. The answer to this question seems to me to depend upon the character of collegiate training on the one hand and of medical training on the other. The primary purpose of collegiate education is to furnish a broad basis of mental discipline and liberal culture independently of direct relation to professional work. Where, as in the old-fashioned college in this country and in the gymnasia and lycées of Germany and France, the student enters college at the age of fifteen or sixteen and is graduated at nineteen or twenty, it is not necessary or even desirable that the undergraduate student should specialize his work with reference to his future profession. Under these circumstances, which obtain in most foreign universities, at least the first year of medical study is devoted mainly to physics, chemistry, and zoology, including comparative anatomy.

These are not, however, the conditions which prevail in this country at the present time, where on the one hand the average age of graduation from our best colleges is at least two years later than in Germany and France, and on the other hand the medical schools do not furnish adequate training in physics, general chemistry, and biology, whereas these sciences are now generally included in the curricula of our colleges. When we consider the fundamental importance of these sciences for the study of medicine, the advanced age of graduation from college, and the special conditions of collegiate and medical education in this country, it seems to me clear that during the period of collegiate study the student intending to study medicine should acquire a fair knowledge of chemistry, physics, and general biology, and to these sciences should be added the study of French and German. Inability to read French and German deprives the physician of personal acquaintance with a large part of the most valuable literature of his profession, and makes it impossible for him to keep thoroughly abreast with the progress of medical science and art. . . .

There are certain points which should be clearly understood as regards the requirement that the preliminary education of a medical student should be a liberal one, indicated by a degree in arts or science, and should be made to include a specified amount and kind of knowledge of physics, chemistry, and biology, with a reading knowledge of French and German. The justification for the latter requirement is that inasmuch as students are kept at college in this country two years longer than in most foreign countries they should be permitted to pursue during at least the last two years of their course subjects which bear upon the study of medicine, but which, although included in the medical curriculum in foreign universities, are strictly liberal studies independent of their professional bearing. These sciences, preliminary to medical study, can be studied and taught better in the college than in the medical school, and, indeed, in foreign universities they are more often pursued by medical students in the philosophical than in the medical faculty. It would be a waste of energy and money to make provision for them in both the medical and the academical departments.

It can not be truthfully said that the plan indicated need to divert the preliminary education from a liberal to a technical and specialized one, for the degree in arts or science will presumably indicate that the student has a liberal education and the special subjects need not be taken up before the last two years of the course. The scheme presupposes that the student will have made up his mind to study medicine in time to include these special subjects in his undergraduate studies. If he has not done so, or if he chooses to exclude them from his collegiate work, he will be obliged to devote at least a year to them after graduation and before beginning the study of medicine. The college authorities should, however, direct attention at the proper period of the course to the importance of these subjects for those who intend to study medicine.

This plan, moreover, adjusts medical education to existing conditions of collegiate education in this country without any essential changes in the curriculum of the latter.

The advanced age of graduation from college is a serious embarrassment to higher medical education in this country, and has led to the unfortunate result that with the increase in the time required for the study of medicine there has been a falling off in the number of medical students with a college

degree in at least one of our leading medical schools, although it can not be doubted that the average amount of preliminary education has increased among our medical students.

Various suggestions have been made, especially by the medical faculties of our universities, to remedy this anomalous condition of collegiate education, or to adapt it to the needs of medical education. I think that we may assume that the college course is not likely to be shortened, or that the college will relinquish that part of its development which has made it something between the old college and a university. There is good reason to believe that there are serious defects in our systems of primary and secondary education, and that without lowering the standard of admission better methods of teaching will enable students to enter college at least a year younger than is now the case.

The plan has been adopted in some of our colleges of permitting students to begin their medical studies in the medical department at the beginning of the senior year. This is a plan which is applicable only where there is a medical school in connection with the college, and involves certain sufficiently apparent difficulties. I think, however, there is much to be said in favor of this arrangement, which permits the student to take up the study of human anatomy, physiology, and physiological chemistry in his senior year in college, provided he has sufficient preliminary training in the fundamental sciences which have been mentioned. It may, however, be questioned whether the time available for the study of physics, chemistry, and general biology in college is any too long for this purpose, and will permit the addition of human anatomy with dissections and other subjects which must be a part of the regular medical curriculum. Unless the student has completed the work of one year of the medical course I do not see the justification of permitting him to shorten by one year the regular medical course because he has a college degree.

It should be understood that if a medical school requires for admission a year's collegiate training in physics, chemistry, and biology, subjects which are included in the medical curriculum of European universities, its period of medical study is, according to European standards, lengthened by one year, the first year being relegated to the collegiate period.

The only medical school in this country where a liberal degree is required for admission is that of the Johns Hopkins University. Here it is also required, for reasons which have been stated, that the candidate for admission shall be able to read French and German, and shall have had a year's collegiate training with laboratory work in physics, chemistry, and biology. It is, of course, impossible for unendowed medical schools to demand anything approaching these conditions for admission. I do not undertake to say that even were other medical schools so situated that they could demand them it would be wise for them to do so under present conditions, but it seems to me that there is room in this country for at least a few medical schools with such a standard. Exactly what is feasible to require as a general standard for admission to medical schools in this country at the present time is a subject which, as already said, I do not consider at this time.

It is true that without a liberal education a man may become a competent physician, and may attain even a high standard of excellence in his profession, but with such education he is better adapted for the study of medicine, he is more likely to succeed in his profession, his social position will be better, and his life will be fuller. . . .

How long should be the period of undergraduate study in a medical school? In Europe it is nowhere less than four years, and in most European countries it is longer. In Sweden it is nine or ten years; in Spain, seven years; in Italy and Holland, six years; in Austria, Russia, Portugal, and several universities of Great Britain, five years; in Germany, four and a half years. In Canada the required period is four years. . . .

The required period of study at the medical department of the Johns Hopkins University, where a full year of collegiate training with laboratory work in physics, chemistry, and biology is required for admission, is, according to European standards, at least five years.

Four years of undergraduate medical study in a medical school, each year being the usual academic year of about eight months, are as much as can reasonably be demanded in this country at the present time. This length of time is sufficient if the student enters with a satisfactory preliminary training, especially if, as is often the case, he supplements the undergraduate course with a year or a year and a half in a hospital or a year of special graduate study.

Only those medical schools which have good laboratory and hospital facilities are warranted in establishing four years' obligatory course. It would be absurd for some medical schools, with their pathetically meagre outfit, to require the student to remain with them four years.

Rhus Poisoning.—In the *American Journal of Pharmacy* for January there is an article on this subject by Mr. George M. Beringer, in which he cites the following communications from the *Garden and Forest*, and states that he is able from personal experience to confirm the statements:

D. P. Penhallow remarks that the poisonous principle is more or less common to the entire family, and he states that, in opening an old marking nut, *Semecarpus anacardium*, he was subjected to the effects of the black, varnish-like latex in the interior, which were those of our common *Rhus toxicodendron*. He also reports serious poisoning resulting from stirring and smelling the Japan lacquer made from *Rhus vernicifera*. He says that after a few experiences it was always possible for him to ascertain whenever he came into an atmosphere charged with the poison. This was manifested by a well-defined acid taste in the mouth and a slight, somewhat acute pain directly between the eyes, which were invariably symptoms of the results to follow. The Japanese, he says, employ the flesh and juices of a fresh giant crab, the *Macrocheira Kæmpferi*, and apply it freely to the poisoned parts. Mr. Penhallow recommends free applications of the following solution: Sodium hyposulphite, half an ounce; glycerin, three ounces; carbolic acid, sixty drops; water, ten ounces.

Mr. E. G. Lodeman writes of his personal experience with this plant, and states that the symptoms of poisoning reappeared for six years consecutively, at about the same time of the year in which he had been poisoned, without his having been again exposed to the plant. An attack of typhoid fever occurred in the seventh year, and for several years afterward he escaped the affection. Thinking himself exempt from the influence of the poison, he rubbed a leaf of the plant on the back of his hand, and again for several years symptoms of poisoning recurred at the same time of the year.

Professor T. J. Burrill again directs attention to his statement made in 1882, in which he attributed the poisonous properties of rhus to the action of bacteria. He admits, however, says Mr. Beringer, that the particles in the latex of the plant, first mistaken for micrococci, are constituents of the latex, and that proof of the bacterial character of the poisoning must be considered as wanting, although he thinks that the apparent period of incubation and activity of the exudation

are arguments in favor of the bacterial theory. Professor Burrill, says the author, has evidently overlooked the investigations made by Professor J. M. Maisch in 1865, which proved conclusively that the poisonous action was due to a peculiar volatile acid which he named toxicodendric acid.

Mr. Beringer states that he was severely poisoned in April, 1883, in the Odd Fellows' Cemetery, Philadelphia, by handling some poison ivy on which the new leaves were just appearing. Although his hands were protected by gloves, and his face and hands were shortly afterward washed, nearly the entire surface of the body suffered, the face and eyelids being so swollen as to nearly produce blindness. Following this attack came a series of boils, and for several years afterward, about the same time, there appeared the characteristic eruption and sensations, although there had been no contact with or exposure to the plant.

By carefully avoiding a too close acquaintance with the genus rhus, he says, he escaped with but very slight punishment for a number of years.

In the early part of May, 1894, unfortunately, while in profuse perspiration, he stopped to take up a few violets for his herbarium, and, in doing so, disturbed some vines and roots of the poison ivy. This was sufficient, however, as a severe attack of poisoning resulted. During the following months, on merely passing by the plants, the same effects were experienced in a moderate degree. In September of the same year the author passed by some *Rhus toxicodendron* in fruit at Haddonfield, N. J., and the effects were again experienced, and still later in November, near Merchantville, N. J., he came across the upright variety with the fruit well developed and the leaves fallen, and his face and hands were again poisoned.

It is now pretty generally admitted, he says, that all parts of the *Rhus toxicodendron* are poisonous, and at all seasons of the year. In his own experience he has observed that the dust shaken from the roots is likewise capable of causing the irritation wherever it comes in contact with the skin. It is popularly believed that persons of a blond complexion are far more susceptible to its influence.

During the past summer the author has washed his face and hands with a solution of hydrogen dioxide as a preventive measure, with apparently good results. Hot soda baths, he says, also appear to be efficacious in the treatment, but for a topical application the following lotion is preferable:

℞ Sodium sulphite, granular..... 1 drachm;
Glycerin..... ½ fluidounce;
Camphor water, q. s. ad fac..... 4 fluidounces.

The Toxic Effects of Topical Applications of Acetanilide.—The January number of the *Yale Medical Journal* publishes the following account of a case reported by Dr. William H. Carmalt, of New Haven: The patient, a girl, eighteen years old, was suffering with an ulcer which had resulted from a burn over the larger part of the hand, in which there had been profuse suppuration. Powdered acetanilide was applied every four hours for twenty-four hours, when symptoms of cyanosis were observed. The employment of the drug was immediately discontinued and in twelve hours the symptoms disappeared. There was no manifestation of disturbance in either the circulation or the nervous system. It would appear, says the writer, as if the effect was somewhat analogous to that of illuminating-gas poisoning, the aeration of the red blood-corpuscles alone being interfered with. It is only fair to state, however, he says, that this is the first occasion on which Dr. Carmalt has observed any difficulty with this drug. He has used acetanilide in hundreds of dressings at the New Haven Hospital since October 1, 1895, and at the dispensary since April 1, 1895.

The Medical Society of the State of New York will hold its ninetieth annual meeting in Albany on January 28th, 29th, and 30th, under the presidency of Dr. Roswell Park, of Buffalo. The programme includes the following papers: On Serum Therapy, by Dr. E. H. Wilson, of Brooklyn; Water and its Relation to Disease, by Dr. W. P. Mason, of Troy; On Sepsis of the Newborn, by Dr. M. A. Crockett, of Buffalo; The Question of Puerperal Self-infection, by Dr. Charles Jewett, of Brooklyn; A Medico-legal Note, by Dr. A. Walter Suiter, of Herkimer; Shall the State attempt to Control the Spread of Tuberculous Disease? by Dr. J. L. Heffron, of Syracuse; The Medical Education of the Future, by Dr. Charles Eliot, of Harvard University; On Sloughing Fibroids complicating Pregnancy, by Dr. M. D. Mann, of Buffalo; Scorbutus in Infants, by Dr. H. C. MacLane, of Brooklyn; The Treatment of Malignant Disease in So-called Cancer Institutions, by Dr. Nathan Jacobson, of Syracuse; Alcoholism and Public Health, by Dr. H. R. Hopkins, of Buffalo; On the Evolution of Pathology, by Dr. J. H. Hunt, of Brooklyn; Abdominal or Vaginal Cœliotomy, which? by Dr. J. W. Whitbeck, of Rochester; Vaginal Hysterectomy without Ligations, by Dr. W. E. Ford, of Utica; Complications in Abdominal Surgery requiring Intestinal Anastomosis, by Dr. A. Vander Veer, of Albany; Some Rare Complications of Appendicitis, by Dr. Herman Mynter, of Buffalo; The Treatment of Fractures of the Patella by Continuous Extension without Confinement in Bed, by Dr. J. D. Bryant, of New York; The Early Diagnosis of Tuberculous Kidney, by Dr. Willy Meyer, of New York; The Improved Cæsarean Section, by Dr. H. J. Garrigues, of New York; Congenital Dislocation of the Hip, by Dr. T. Halstead Meyers, of New York; Heteroplasty with Celluloid to Cover Defects in the Skull, by Dr. Willy Meyer, of New York; Irritation and Counter-irritation, by Dr. William H. Pepper, of Philadelphia; Deficient Excretion from Kidneys not Organically Diseased in some of the Disorders Peculiar to Women, by Dr. James H. Etheridge, of Chicago; The president's address, On the Study of Pathology by Comparative Methods, by Dr. Roswell Park, of Buffalo; The Reorganization of the Coroner System, by Dr. W. G. Macdonald, of Albany; The Distinctive Fractures of Railroad Surgery, by Dr. R. S. Harnden, of Waverly; Diabetes and Acetonuria in Children, by Dr. W. S. Cheesman, of Auburn; The Development of Muscular Atrophy on a Basis of Old Infantile Spinal Paralysis, a Favorable Type, by Dr. W. Browning, of Brooklyn; The Equilibrium Function of the Ear, by Dr. Gaylord P. Clark, of Syracuse; On the Surgical Treatment of Retroversions and Retroflexions, with Special Reference to Vaginal Fixation, by Dr. H. N. Vineberg, of New York; Neuritis complicating Dislocations of the Shoulder and Elbow, by Dr. M. A. Veeder, of Lyons; Trephining for Injuries and Diseases of the Cranium, by Dr. W. W. Seymour, of Troy; Difficult Perineal and Suprapubic Lithotomy, by Dr. W. Hailes, Jr., of Albany; Abscess of the Frontal Sinus, by Dr. J. P. Creveling, of Auburn; Some Notes on Trachoma, by Dr. M. L. Foster, of New York; Tetanoid Hysteria, by Dr. Grace Peckham Murray, of New York; The Treatment of Œdema of the Lungs, by Dr. Louis F. Bishop, of New York; The Treatment of Sciatica with Nitroglycerin, by Dr. W. C. Krauss, of Buffalo; and The Treatment of Aspiration Pneumonia by Drainage by Inversion, by Dr. W. W. Seymour, of Troy.

The following subjects will be presented for discussion: On Early and Latent Syphilis in Infants and Young Children: The Diagnosis and Treatment, by Dr. George T. Elliott, of

New York; The Pathology, by Dr. Ernest Wende, of Buffalo; and The Nervous Manifestations, by Dr. B. Sachs, of New York. The Diseases of Intra-uterine Life: On the Part of the Mother, by Dr. E. H. Grandin, of New York; and On the Part of the Child, by Dr. P. W. Van Peyma, of Buffalo. On the Present Status of the Surgery of the Brain: The Surgery of the Skull, by Dr. E. D. Fisher, Dr. M. A. Starr, and Dr. S. D. Powell, of New York; The Surgical Treatment of Epilepsy, by Dr. B. Sachs, of New York; and Craniotomy for Imbecility and Epilepsy, by Dr. C. L. Dana, of New York, and Dr. J. W. Putnam and Dr. W. C. Krauss, of Buffalo.

Legal Measures for Preventing the Spread of Ophthalmia.—At the last meeting of the Medical Society of the State of New York a special committee was appointed to call the attention of nurses and midwives to the law regulating their duties in cases of purulent ophthalmia of infants, and to report to the proper authorities cases in which this law was violated. In a circular, the committee says that it is well known that this disease can nearly always be controlled when proper treatment is commenced promptly, and also that when this treatment is omitted too long, or sometimes even for a few hours, it is then too late to save the little patient from lifelong blindness. The disease has therefore been considered worthy of special legislation, and the law which relates to nurses and midwives is a part of chapter 361 of the laws of 1892, and reads as follows:

"Being a midwife, nurse, or other person having the care of an infant within the age of two weeks, neglects or omits to report immediately to the health officer or to a legally qualified practitioner of medicine of the city, town, or place where such child is being cared for, the fact that one or both eyes of such infant are inflamed or reddened whenever such shall be the case, or who applies any remedy therefor without the advice, or except by the direction of such officer or physician," etc.

Any person may notify the district attorney of this fault on the part of a nurse, and it becomes his duty to bring her case before the grand jury and have her indicted, prosecuted, and convicted in the name of the State, doing this free of cost to the parents of the child or to any one else.

Attention is called to cases in which convictions have been obtained under this law. In New York city the Society for the Prevention of Cruelty to Children has taken upon itself the duty of prosecuting in instances of violation of the statute.

The committee calls attention to this law because it realizes that many nurses and midwives have either forgotten its importance or overlooked its existence. It is sincerely hoped, says the circular, there will be no necessity for notifying the authorities of its violation, but with increased care on the part of those having charge of infants the number of blind may be materially decreased.

[Signed.] Lucien Howe, M. D., Buffalo; Peter A. Callan, M. D., New York; William C. Wey, M. D., Elmira. } *Committee.*

The New York Post-graduate Medical School and Hospital.—The *Sun* lately printed the following letter from the president of the institution, Dr. D. B. St. John Roosa:

"The *Sun* of December 31st contains an editorial entitled A Case Not Made Out, referring to the New York Post-graduate Medical School and Hospital, which, it seems to me, does not fully state the case of that institution, nor adequately present its claims on the corporation of the city of New York for charity. The private rooms in a charity hospital are not for the purpose of enabling physicians to secure fees. The physicians who have patients in these rooms would have them in other places, and secure the same fees, did the Post-graduate Hospital not exist. Private rooms are maintained for the sole purpose of enabling the hospital to make a little money, to be devoted to its charitable purposes. The benefit to the physicians is merely incidental, just as it is in St. Luke's and the Presbyterian and the New York Hospital, all of which have private rooms, but, I believe, they are all considered thoroughly charitable institutions. The Post-graduate Medical School and Hospital claims the charity of the city of New York not only on account of its dispensary and its hospital, but also because it has established and maintained in this city for thirteen years an institution where doctors who have already acquired the right to practise are made more competent, and because the service of more than one hundred physicians is given gratuitously to secure this end. There is quite enough precedent for aid to us and the Polyclinic in the action of the Board of Charities and Correction in its building in 1863 a medical school on the grounds of the city, and its present maintenance at the public expense of costly and well-fitted amphitheatres for teaching, so that medical students might be attracted to this city. The schools that used these amphitheatres and this medical college, unlike the Post-graduate Medical School and Hospital, pay salaries to all their teachers. Besides, as I am informed, the Board of Estimate and Apportionment gave the sum allowed by the Legislature, in the same act with that referring to us, to a charitable midwifery institution near us, which liberally rewards its medical officers for their services. These things lead us to hope that future boards of estimate and apportionment will consider our case in a larger sense than that of a mere hospital, and give us the aid which I think we deserve at the hands of a city whose material prosperity we increase, while we do a great charitable work among the poor. The solely charitable purposes of this institution are beyond question, and may invite comparison with those of any other to which the corporation furnishes any aid, either direct or indirect."

The Treatment of Swelled Testicle.—In the third volume of Dennis and Billings's new *System of Surgery* Dr. J. William White and Dr. William H. Furness, 3d, the authors of the section on the Surgery of the Genito-urinary System, remark that a patient in whom epididymitis is developing should be put to bed at once, with the scrotum elevated on a pad of cotton. Free movements of the bowels should be kept up and the diet restricted to the very lightest food. If there is any fever, it is well to give a drop of tincture of aconite and five grains of potassium bromide every two or three hours. The affected testicle should be wrapped in lint and kept constantly moistened either with lead-water and laudanum or with the following lotion:

Tincture of aconite,
Tincture of opium, each..... 1 fl. oz.;
Diluted lead-water,
Water, each..... 2 fl. oz.

Cold compresses (not iced) are often very soothing, but rest is the chief curative measure during the acute stage.

The Multiplication of Medical Journals published in Paris is astounding. The *Progrès médical* says that in 1894 there were 177, at the close of 1895 there were 199, and four new ones are already announced for 1896.

The Death of Dr. Charles Fauvel, of Paris, the well-known laryngologist, is announced as having taken place on December 17th.

Lectures and Addresses.

NEPHRITIS OF THE NEWLY BORN.

AN ADDRESS DELIVERED BEFORE
THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.
November 28, 1895.

BY A. JACOBI, M. D.,
NEW YORK.

NOTHING would have pleased me more than to appear before you, who have kindly consented to listen to me part of an evening, with something absolutely new. The history of medicine, however, exhibits but very few instances of striking novelty. It is more replete with the proofs of a slow and steady evolution than with sudden and unthought-of revelations. Still, there is one peculiar feature both in the study of our science and the practice of our art—viz., that wherever we approach it it is intensely interesting. That is why even the men borne down with hard work, and altogether too often near the brink of mental and physical exhaustion in the performance of their arduous daily duties, are always roused to enthusiasm by a single new experience, an unheard-of fact, a novel hypothesis, or only a new point of view calculated either to enlarge their horizon or to benefit their fellow-men.

To me the connection of the kidneys with the rest of the organism has been a subject of interest through all my professional life. These organs are so intimately interwoven with the whole physiological existence that either their anatomy or their function participates in every disease of every organ. This is particularly perceptible in the infectious diseases, no matter whether mild or severe. In many of them one of the forms of nephritis is very common. In scarlatina, for instance, the desquamative process is quite active in the uriniferous tubes, and results in a peculiar form of inflammation; in some cases of scarlatina and most of the other acute eruptive and infectious maladies it is parenchymatous changes that are more frequently met with. Thus, indeed, it is worth while to study the urine in every case of disease. It is true that we are not always rewarded with the finding of severe lesions; for, happily, most of the cases of secondary nephritis are neither dangerous nor of long duration. But there is none of them but may lead to a severe form, with possibly a fatal termination. Therefore the frequency of infectious diseases in infancy and childhood ought to fix our attention constantly in the direction of the kidneys. It is true that sometimes we are unable to find anything but albuminuria, which, in the absence of kidney elements under the microscope, we are liable to dismiss as transient and of little account. But in this we are very apt to be mistaken. My cases of uncomplicated and transient albuminuria have become wonderfully scarce since I invariably employ for the examination of the urine the centrifuge. Among twenty successive cases where the verdict is "trace of albumin" I am certain to find in the centrifuged deposits of nineteen, within a few minutes, the almost uniform result—blood-cells, hyaline casts, hyaline casts studded with epithelia, or finely or coarsely granulated casts.

Many of these forms of nephritis are, as I said, short-lived. Quite often will they disappear within a week or ten days. But this happy termination is far from being universal. There is nobody here but has been surprised in a child of advanced age or in an adolescent by an attack of uræmic convulsion, the cause of which could be traced to a scarlet fever which, six or ten years ago, terminated in apparent recovery. The same experience is had with nephritis from other causes; for, unfortunately, we know by this time that besides scarlatina, measles, varioloid, and varicella, even vaccinia, acute local diseases of the skin, erysipelas, rheumatism, typhoid fever, acute and chronic intestinal diseases may be complicated with or followed by nephritis. For this reason nephritis is very common in infancy and childhood, and ought to be searched for whenever the origin of prominent or dangerous symptoms is not at once clear. Fortunately, it is easy to obtain a specimen of urine, for catheterization is more readily successful in the child than in many adults. Thus it will frequently happen that a nephritis is found when the prominent cerebral symptoms suggested the diagnosis of encephalitis or meningitis. Of the many cases of this nature which I have met with, the following will furnish an illustration:

A boy of five weeks who had appeared to be in fair health was taken with high fever and convulsions. The case occurred in a family living in very moderate circumstances, therefore the medical man had good reason to suppose that the infant had been ailing some days before it was considered necessary to call him in. The temperature was 104° to 105° F., the pulse almost uncountable, and the convulsions had not been frequent when I saw the patient. There was some cyanosis and perspiration over the upper part of the body; the legs and feet were cold, the head was very hot. There was no œdema. The pupils were equal, fairly dilated, contracted a very little, but sluggishly, under the influence of a strong ray of light, and under the same light dilated again and contracted within certain limits. The equality of the pupils, combined with that peculiar floating condition of the iris, made me think of uræmia as the cause of all the cerebral symptoms. The urine was known to be scanty, but that is what it also is in meningitis, and in every child that has not been supplied with a sufficient quantity of water. Fortunately, there was some in the bladder. Boiling almost solidified it, and the microscope revealed blood-cells, epithelial and granular casts, the latter both fine and coarse. The child died; no autopsy could be had. No clew could be found to the causation of the fatal disease; and still, the baby was so young that in all probability the origin of the fatal nephritis might have been found in some occurrence of the first few days of life.

It is this period of early life to which I mean to direct your special attention to-night by reporting a few of the many cases of nephritis met with within a few days or weeks after birth. Some are primarily renal diseases, some are secondary. To the latter class belong those nephritides which are complicated with or dependent upon *intestinal disorders.* This connection is quite frequent. In many instances diarrhœal disorders are the *results* of nephritis,

but quite frequently both acute and chronic intestinal diseases appear to be the *causes* of nephritis, which may be quite ominous; for indeed it is here as in other diseases, many of which are liable to terminate fatally by their renal complication. Every practitioner loses many a case of pneumonia, not through the severity of the pulmonary lesion, but on account of the accompanying nephritis. In this way the entero-colitis of the newly born is quite apt to destroy life through nephritis. In a highly creditable essay (*Arch. f. Kinderk.*, 1894, xvii, p. 222) Felsenthal and Bernhard have studied the connection of nephritis with acute and chronic intestinal disorders of infancy and childhood. They have also collected the literature on the subject. Parrot met with it in the atrophy ("athrepsia") of young infants; Kjellberg, Fischl, Stiller, Baginsky, Hirschsprung, Hagenbach, Henoch, Epstein, and others have recorded cases of nephritis accompanying intestinal disorders. The cases of this description are by no means rare in the first week of life. When I look over the list of the numerous cases of the kind I have personally seen, it almost seems to me supererogation to record a case; and still I know that many of my colleagues with whom I saw the cases appeared to be surprised at recognizing both the presence of nephritis in such cases and the facility with which the diagnosis could be made.

The literature on the subject is but scanty. I have, however, reason to believe that even those who have known the connection between intestinal diseases and nephritis quite well have not published their experience. It has happened to me personally that my chapters on catarrh and ulceration of the bowels in my *Intestinal Diseases of Infancy and Childhood*, 1887, are silent on that subject by an oversight of my own. But in the discussion on Two Cases of Acute Primary Nephritis in Infancy, by L. Emmett Holt, one of which was perhaps caused by intestinal sepsis without that explanation being suspected, I took occasion to say (*Trans. of the Am. Pæd. Soc.*, 1891, vol. iii, p. 233): "There are cases of nephritis which complicate intestinal diseases. It is true that many spells of vomiting and diarrhœa are merely symptoms of nephritis. A number of cases supposed to be cholera, even Asiatic, are found to be acute nephritis. On the other hand, where we have to do with an acute or subacute intestinal catarrh, a *prolonged seizure may give rise to secondary nephritis*. I am positive that it will be found to be much more frequent than it was considered to be." In the *Archives of Pædiatrics*, June, 1890, p. 420, diarrhœa is also briefly mentioned by me as one of the many causes of nephritis.

It is but two years ago that a colleague presented a boy, five days old, the child of very poor parents, at my office. The cord had fallen off and the stump looked normal. The mouth was slightly covered with sprue. The lips, fingers, and toes were cyanotic, though the feeble heart appeared normal; the baby was nearly collapsed. Rectal temperature, 103° F. For two days there had been loose mucous discharges in great numbers; they were slightly offensive, did not contain meconium any more, but already at that early time coagulated masses of casein. There was no tenesmus and no blood. The urine of the second and third day appeared to the attendants darker than normal; during the last day but little had been passed. We drew about ten cubic centimetres of a dark, smoke-colored fluid. It contained albumin in great quantity, and under the microscope blood-cells, epithelial and granular casts, and urates. The baby died the following day. No autopsy.

It was a similar case that I saw with the same gentleman a few months afterward. He made the diagnosis before I met him. It proved one of the most fortunate I have seen; firstly, because it was not so severe as the former, and, secondly, because there was ample time to restore and equalize by warm bathing both the cutaneous and general circulation, to cleanse and disinfect the intestine and fill the blood-vessels, to establish a flow of urine through the uriniferous tubes by means of copious and frequent irrigations of the bowels, and to stimulate the heart by judicious doses of strychnine, of which the infant took nearly a milligramme during twenty-four hours.

What little I have said of the nature of the discharges, their offensiveness and frequency, suggests the cause of the secondary nephritis. It evidently depends on the absorption of a toxine, no matter whether it originates in the invasion of a streptococcus, or of the bacterium coli, or one of the other forms of microbes detailed by Booker and by Jeffries in the *Transactions of the American Pædiatric Society* of 1889.

Their absorption is facilitated by some peculiar anatomical conditions.

The muscular apparatus of the intestine of the fœtus and of the newly born is but slightly developed. During fœtal life its function is but trifling, and its contents move but slowly. Immediately after birth that muscular debility predisposes to colic, as air which is swallowed, and gases, both innocuous and putrid, which are developed in the tract, are expelled with difficulty. Besides, the infantile digestive tract is unexpectedly long. According to Beneke, the proportion of the length of the body to that of the small intestine is in the adult 100 to 450; in the newly born, however, 100 to 570; in the second year, 100 to 660. Moreover, the villi are generally numerous and large; some assert they surpass in size those found in the adult intestine; the capillaries of the villi, it is claimed, have greater absolute size, so much so that their diameter is larger than that of the same vessels in the adult.* All this tends to show that both the accumulation of septic material in, and absorption from, the interior of the intestines is rendered very easy. The access of microbes to the intestinal tract of the newly born is by no means difficult. How they enter, through the mouth, the anus, or the blood, I have but recently discussed in the first number of *Pædiatrics*. After all, it seems that the nephritis originating from intestinal infection is of a similar nature to what we observe in typhoid fever or any of the other infectious diseases.

Nephritis in *typhoid fever* of the newly born I have seen but once, for the simple reason that I have observed but

* A. Jacobi. *Intest. Dis. of Infancy and Childhood.* George S Davis, 1887. Chapter on Intestinal Digestion.

this one case of typhoid fever in one so young. It was cursorily mentioned on page 29 of my *Treatise on Diphtheria*, 1880. The baby died on the sixteenth day of its life, twenty-two years ago. The mother recovered. Its kidneys were much congested, the two substances hardly discernible from each other, and blood oozed from the cut surfaces. There had been anuria for two days, and no urine was found in the bladder after death.

In one of the three cases of *diphtheria* in the newly born, reported on page 30 of my *Treatise*, I was favored with an autopsy. The baby was taken seven days after birth and died on the ninth. The kidneys were in the condition described in the previous case. No microscopical examination of the urine could be had.

In connection with this subject I now present the case of the youngest patient I have seen destroyed by *potassic chlorate:*

B. C., a boy of nine days, was seized, January 15, 1882, with convulsions, after not having voided urine for several hours. The last time, when a teaspoonful was passed, it was of a dark color, stained the napkin, and seemed to give pain during the discharge. There was constant rectal tenesmus, with some protrusion of the bowel, some five or six hours before the convulsion. During all this time the complexion was sallow, and the lips and finger and toe nails were blue. I saw the infant after the convulsions, with hardly a pulse, bluish lips, brownish complexion, the scleræ still yellow and largely ingested with dilated blood-vessels. Heart beats from 200 to 220 a minute, scarcely perceptible. Within an hour after my visit he died. The blood in the whole body was of an intensely dark color, the heart of normal size and structure, ductus Botalli nearly closed, ductus venosus Arantii still open. Lungs and spleen were engorged and purplish, so was the liver. The kidneys were large; a number of blood points—small hæmorrhages—were visible on the longitudinal section; there were, besides, a number of dark streaks corresponding with the uriniferous tubes, and the difference between the two renal substances was almost extinct. Their color was unusually dark, and they offered a strongly marked elastic resistance to the touch. What little urine (about two cubic centimetres) was taken from the bladder contained much pelvic epithelium, and consisted almost exclusively of decomposed blood-cells.

The great resemblance of this form of nephritis to what I had described in the third volume of Gerhardt's *Handbuch der Kinderkrankheiten*, article Diphtheria, in 1877, and in a paper on The Remedial and Poisonous Effects of Chlorate of Potassium, published in the *Medical Record* of March 15, 1879, made me inquire rather scrupulously into the history of the dead baby. The mother had suffered from copious vaginal discharge during the last few months of her pregnancy. Neither she nor her surroundings were of the cleanest. The first few days of the infant's life were normal. On the third and fourth day sprue developed and covered lips and cheeks with thick deposits. The midwife in charge called no physician. She knew the best thing for sprue and inflicted it. She brushed the mouth with a saturated solution of potassic chlorate, as she proudly asserted, quite often, and frequently gave a few drops to drink. I could not learn the strength of her solution. She always used it and it had a powerful effect, she said. As far as I was permitted to learn, she dissolved a tablespoonful in a tumblerful of water; I still found a sediment of the salt in the bottom of a tumbler.

A case of nephritis after *vaccination* was reported by Perl in the *Berliner klinische Wochenschrift*, 1893, No. 28. It behaved exactly as nephritis in infectious fevers. The child, two years and nine months old, became very restless about the usual time of the onset of a vaccinia fever—viz., from the fourth to the fifth day; at the same time there seemed to be abdominal and lumbar pains. Within a day after, simultaneously with the appearance of six vaccination vesicles, there was albumin in the urine to the amount of one half of a per mille; also hæmatin, blood cells, and some leucocytes. The casts were either purely hyaline, or hyaline studded with epithelium. The child was well on the twelfth day. The whole morbid process ran its full course in six days, with no serious symptoms at all.

The following is a case of a similar description in a very young infant:

In an immigrant hotel of Greenwich Street, New York, I saw with Dr. John Bishop, April 4, 1877, two children, one of four years and one of three weeks, who had been vaccinated ten days previously. I was expected to see the older one, who had an erysipelas of moderate size and severity; it got well after twice traveling over the surface of the body. On the very day of my visit the baby, who had run through her vaccinia fever with no unusual discomfort, was seized with an attack of convulsions. When I saw her there was a rectal temperature of 103°, a dazed look, injected conjunctivæ, pupils equal, somewhat dilated, and floating under the influence of light. The latter symptoms induced me to draw urine and examine it. It was scanty and contained a trace of albumin, a few blood-cells, and hyaline and finely granular casts. This nephritis lasted two weeks before it finally disappeared. During all this time there was no other convulsion, no œdema, but an occasional vomiting spell and diarrhœa during the first week of the illness; the pupil symptom persisted; the temperature varied between 101° and 103°, a moderate remission taking place in the morning. During the second (and last) week of the disease all the above symptoms gradually disappeared, and the temperature went down. In their place a slight œdema of the lower extremities and of the face were observed. The microscopical changes in the condition of the urine remained the same about ten days after they were first discovered. Then they disappeared, and recovery remained undisturbed.

Renal disorders, more or less dangerous, are direct results of *sudden changes in the circulation*, without or with visible alterations of the blood. To the first class belongs a case I once saw with a medical friend who had so much confidence in the vitality and vigor of the newly born that he commenced to enforce his theories on the necessity of early hardening immediately after birth. He would plunge the newcomers into cold water, and feel a grim delight in taking their incipient breath away and making them shriek in reflex self-defense. Two of his victims I saw with him; they died within a fortnight. The second we examined post mortem. There was a pneumonia, it is true, perhaps sufficient to destroy life. But the most apparent and probable cause of death, preceded by suppression of urine, was evidently bilateral nephritis. Both the kidneys were large, intensely congested, and blood poured out of the cuts; the difference between the two substances could not be dis-

tinguished. With him I saw no more such cases, for I suggested the probability that the cold bathing of the newly born furnished us the specimen. But the more I have seen of similar cases in the adult, the more do I feel that I was correct in my charge. For acute nephritis, interstitial, sometimes hæmorrhagic, is an occasionally unavoidable occurrence in sudden suppression of cutaneous circulation. Who has not seen death occurring from nephritis, not preceded by a chronic affection, in persons who have been resuscitated from drowning in an ice-cold river, or have been exposed to a driving rain storm while exerting themselves to get under shelter, or to cold and sleet in an open sleigh? What the slow influence of cold can not accomplish in the healthy and vigorous, what not even a nephrectomy can accomplish in the remaining kidney, its sudden effect on the feeble, or fatigued, or even the vigorous, will easily bring about. No matter whether the reasons are to be sought for in an antagonism of the skin and kidneys, or the enforced elimination of cutaneous excrements through the kidneys, the facts are actual. Moreover, direct experiments made by Lassar unmistakably prove the causation of interstitial inflammation by sudden refrigeration.

Like excessive *cold*, *heat* may lead to nephritis and death. Only once have I seen a newly born sacrificed in that way through his first bath. The midwife evidently had anæsthesia or analgesia. Bystanders noticed the steaming of the water in the bath tub, the suffering of the suffocating baby, his livid appearance; and the raising of large blisters on the surface told the story. The baby died within a day, having lost some blood mixed with meconium and passed no urine. Even the bladder was empty at the autopsy, and deeply congested. The kidneys were livid and succulent; blood oozed out of the cut surfaces. Blood was also extravasated under the capsules. If the case had run a longer course, in all probability hæmoglobinuria, produced by dissolution of blood-corpuscles, would have shown itself, as in the experimental researches of Ponfick and of Wertheim. Changes in the general circulation need not, however, be of this sudden and violent type, and still result in some injury.

Indeed, the albuminuria of the newly born is frequently due to the *insufficiency of circulation*, and passes off when the latter is freely established; just as the venous obstruction caused by heart or lung disease results in temporary albuminuria in the adult. In a certain number of these cases of almost congenital albuminuria there is no blood under the microscope, in others there is, in others there is more—viz., nephritis. It is probable that after most cases of protracted *asphyxia* of the newly born albumin will be found in the urine, with or without blood. Thus the kidneys repeat but the process which has been so much better studied in the brain by Langdon Down* and also by me.†

Indeed, in three cases of nephritis, two of which proved fatal, observed within five weeks after birth, no ætiology except that of previous long-continued asphyxia could be elicited. It was in those two that granular and coarse casts were in the majority; in the one which survived, there was still after weeks blood and a few epithelial and finely granular casts.

In *congenital heart diseases* with cyanosis, albuminuria is quite common. Again I warn against the facility of overlooking it. Time and again I am told there is no albumin in a specimen; time and again there is in such cases a trace, which is called "only a trace," but yields fields full of different casts in the centrifuged specimen. This very trace is sometimes not discovered unless the test tube be looked at through water, and unless some little time is given for the coagulation to become visible. Nephritis does not always work with heavy loads of albumin; that the last stage of chronic nephritis of any period of life may be without albuminuria for weeks in succession need not be retold.

I once saw a baby of four months, who had *spina bifida* and consecutive paralysis and contractures of both lower extremities, die with nephritis. We seldom see our patients with spina bifida when they breathe their last; for, until a brief time ago, most of them were left to die without an attempt at relieving them, and a neighboring medical man was called in at the last minute so that a certificate of death might be obtained. The same opportunity of observing a fatal case of nephritis in a little girl of three months I had about the same time. The patient had a *paralysis* of both lower extremities, dating from birth, and occasioned, probably, by an intraspinal hæmorrhage caused during difficult extraction in breech presentation. Maybe I am correct when in both cases I attribute the renal changes, chronic in character, to the fact that the circulation being impeded by the muscular inactivity of a large part of the body was more directed toward the internal organs. Maybe, however, this suggestion does not appear acceptable,* for it is possible to assume that the same violence which caused a spinal hæmorrhage and paraplegia was sufficient to produce the same effect in the kidneys.

In the newly born we observe not only the adverse results of the sudden changes from fœtal to post-natal circulation, but also lesions depending upon the *peculiar structure of the blood-vessels*. The newly born is removed from the embryo and fœtus by a single station only. Its tissues are in part still embryonic, and endowed with less solid structure. This is why hæmorrhages are so very frequent in the newly born. Meningeal hæmorrhages are most frequent during the first week, and the slight coagulability of the blood of the newly born adds to its dangers. In regard to the brain, I have considered this question years ago, and frequently since, mostly in connection with asphyxia in the newly born. A large number of cases of idiocy, epilepsy, paralysis, and insanity in the very young are due to meningeal hæmorrhage of early days often ushered in by asphyxia. Similar occurrences take place in other organs. Disseminated pleural and pericardial hæmorrhages are quite frequent in the newly born under the influence of retarded or interrupted circulation. When

* *Transactions of the Obstetrical Society*, London, 1876.

† *American Journal of Obstetrics*, xxiv, 1891, No. 6.

* As above stated, not even the removal of a whole kidney results in a nephritis of the other.

the latter improves, the hæmorrhagic points may become absorbed. So it is in the kidneys.

Parenchymatous hæmorrhages are capable of causing inflammations in the kidneys as they do in other organs. In many cases, however, they prove innocuous. In the muscles, the brain, the lungs, extravasations take place without leaving any trace behind. It is probable that whenever no healthy tissue is torn, when an extravasation takes place between fibrillæ, absorption takes place. When there is, however, an actual lesion of tissue, a secondary inflammation is or may be the consequence. Many years ago I was startled by an acute nephritis appearing in a delicate but healthy boy of four years, the son of a well-known practitioner in New York. None of the usual causes of the disease could be traced, and I was perfectly at sea until a crop of petechiæ appeared over the chest and the extremities. I then learned that six months previously the child had had another attack of purpura which gave rise to no symptoms, and that a few days before the first symptoms of this acute renal disorder there had been a few petechiæ all over the surface. The urine showed under the microscope rather an unusual amount of blood, together with plenty of blood casts and granular casts. It struck me, therefore, that the nephritis was in this case due to disseminated renal hæmorrhages, and I ventured to give a rather favorable prognosis. It took but a few weeks before the patient had fully recovered. Two similar cases have been encountered since, one in a girl of seven, one of eleven years. Both recovered. Never before did it occur to me to look upon the kidneys as more than very rare participants in a purpuric process, except in cases of actual hæmaturia.

In two newly born infants I have seen similar processes originating from the same source. A boy of five days was seen for *melæna* on his fifth day. There was vomiting of blood; there were bloody stools. Their color was not quite black; some of the blood was red, and its origin could be assigned to the lower part of the intestinal tract. The baby appeared to recover a little from the sudden shock of the loss of blood, when, on the next day, slight traces of blood appeared in the urine. Part of the blood cells were tolerably normal. Within another day the quantity of urine diminished greatly and assumed a smoky hue. The microscope still revealed blood cells, but also blood casts, a very few epithelial and many more finely granular casts. The baby died and the kidneys were removed. Both of them were markedly congested. On the walls of the pelvis were superficial hæmorrhages; sections revealed a number of rather fresh blood points. There was no doubt in the minds of all those present that the nephritis in this case was due to the irritation set up by the local hæmorrhages.

Another case dates twenty-six years back. After a protracted labor a boy was born in breech presentation. Ecchymoses over the abdomen proved the difficulty of parturition and the summary procedures of the midwife in charge. Almost the first urine voided by the infant was bloody, and the diagnosis of traumatic renal hæmorrhage appeared justified. Within a day the blood disappeared almost entirely, and urine became suppressed. The baby died on the fourth day, and was subjected to a coroner's inquest. There was a moderate amount of blood clot under the peritoneal covering of the liver, the liver was torn to a distance of about three centimetres, the peritonæum slightly torn, and blood had escaped into the abdominal cavity. Both kidneys were large, dark, and blood-stained on section; the two substances hardly differed from each other.

These were extreme cases, and their diagnosis was in a short time followed by death. How many there may occur in which extravasation is but moderate, and the amount of local or perhaps unilateral nephritis is not immediately fatal, perhaps even inclined to get well, is difficult to say. Large maternities, however, and foundling institutions are better prepared for observing such occurrences than the practitioner engaged in private or consulting work.

Frequent causes of nephritis of the newly born are *uric-acid infarctions*. They occur from the second to the twenty-third day, but also before birth.* They are of different varieties. In a part or in all of the straight uriniferous tubes there are found yellowish-red or brownish, spherical or angular bodies in such quantities as to form considerable deposits and, when they are discharged during life, to cause large stains of more or less solidity in the napkins. They are in rare cases accompanied with blood. They consist of uric acid and of ammonium urate. The latter is readily soluble in acetic acid, from which uric acid crystallizes in rhombic shapes. In one case Ebstein met in the tubuli contorti with yellow globules consisting of uric acid and an organic stroma which contained no mucus, but consisted of albuminoids which were soluble in acetic acid, and exhibited either a concentric structure or irregular layers. At once the question rises in our minds as to the nature of this organic stroma. It must strike us that it can be of either of two origins. It is either depending on a cause not connected with the presence of the uric-acid infarction, or it is the direct consequence of a local irritation caused by the deposit—viz., secondary exudation. In this manner that form of infarction would, by itself alone, exhibit a mild degree of nephritis.

A second form of renal infarctions is of a *hæmorrhagic and pigmentous* nature. They look very much like those already described, and are found in the same localities. They are granular, spherical, or irregular conglomerates, which contain crystals of hæmatoidin. They are the results of small extravasations originating in general hyperæmia of the canaliculi, and depend on various causes, to the principal of which I shall return. The usual changes of hæmatin alter the color of these deposits, which contain

* Virchow's original opinion, according to which the presence of uric-acid infarction requires a certain duration of life, has been to a certain extent rescinded by the proof furnished by a premature and stillborn fœtus which contained uric acid in its urine and urate of ammonium as sediment. Moreover, well-developed uric-acid infarctions were observed by Martin (*Jenaische Ann.*, 1850) in a fœtus born in the unruptured membranes after an unsuccessful attempt at respiration. Hoogeweg (Casper, *Viertelj.*, 1855) met with them in an infant whose heart ceased to beat three quarters of an hour before delivery. Birch-Hirschfeld has a similar case, and Hofmann (*Gerichtl. Med.*, fifth edition, 1891, p. 748) published the cases of two infants, one of whom lived but twenty-three hours, the other only fifteen minutes, who exhibited uric-acid infarctions in full development.

no crystals of uric acid or ammonium urate, and are not affected by acetic acid.*

Calcareous deposits are also found in the newly born. They occur mainly in the lower end of the straight canaliculi, near the papillæ, are of a whitish color, and may therefore be mistaken on inspection for interstitial indurations. They are mostly either carbonate or phosphate of calcium, but rarely triple phosphate, and are soluble in dilute hydrochloric acid. They are, under favorable circumstances, deposited into and upon the epithelia.

Which are these favorable circumstances? Both phosphates and carbonates of calcium are known to be deposited from the blood whenever circulation is retarded or impeded; for instance, in the older baby in the latter stages of epiphyseal rhachitis. In the newly born the circulation is retarded or impeded by congenital (or rapidly acquired) heart disease, by general debility, or by asphyxia. As early as 1883 (*Virch. Arch.*) Litten counted among such favorable conditions a coagulation necrosis occasioned by the interruption of circulation. Thus these forms of retarded circulation, to which I alluded before in a different connection, exert a baneful influence from a chemical point of view.

The normal frequency of uric-acid and other renal infarctions explains the great many cases of gravel and stone in the very young. They are observed in the earliest age, contrary to the opinion of Rosenstein. This great author on the diseases of the kidneys repudiates the connection between the symptoms of renal colic and vesical calculi, and between renal infarctions and vesical calculi. He admits having observed renal colic in the first year of life, but in a single baby only. Now this is very unfortunate, and can be explained only, I believe, by some characteristics in the field of his observations. Exceptional cases, such as those of Woehler and Denis, in which a renal calculus consisting of uric acid was found in a premature and stillborn fœtus, need not be counted at all. But the observations of Heusinger relating to the frequent occurrence of renal calculus in the first year of life are more conclusive. I met with renal calculus quite frequently when I had more opportunities to make autopsies of young infants, and have often alluded to a series of forty post-mortem examinations made on babies who died of miscellaneous diseases, in six of whom I found a renal calculus. Nor do I believe I am mistaken when I express my conviction that many of you have observed actual gravel in the very young, and many more the violent spasmodic pains of infants, accompanied with erections, dysuria, even convulsions, and sudden relief mostly attended with urination.

It is evident that the presence of crystalline masses in the tubes and papillæ of the kidneys is liable to be dangerous. They encroach upon the soft tissue in which they are imbedded, disintegrate the epithelium, irritate the surface, and produce slight hæmorrhage and inflammation. In many cases of nephritis of the very young there was a distinct history of dysuria and of copious deposits in the napkins, not infrequently mixed with blood. What gravel and stone can accomplish in more advanced months and years is more easily brought about in the half-perfected tissue of the newly born.

In regard to the dangers attending the presence of uric acid in the kidneys I have more to say on preventives than curatives. When we deal with gravel and stone in the kidneys of adults our efforts are directed to the solution of the deposits. Plenty of water, alkaline mineral waters, alkalies, mainly potassic salts, lithia, piperazine, and lysidine are pressed into service. In the newly born, in whom we must, as infarctions are the rule, expect the presence of the danger, we are in the habit of doing absolutely nothing, though prevention be within easy reach. Water is, if not the panacea, at all events the indicated remedy. But in no period of life is water more withheld from the helpless creature than in the first few days. Mother's milk is not forthcoming until a few days have passed by, and then it appears in small quantities only. Even the experience that the newly born loses weight by being starved is charged against Providence, which has willed it so from times antediluvial. If water were given plentifully and as methodically as syrup of figs or castor oil, much harm could be avoided. And here permit me a few words *pro domo*. In regard to feeding the newly born, I have practised these forty years, and taught thirty-five, not only that the very young infant must be fed, but that its artificial food must be greatly diluted. In those early times I knew only that the baby would best bear great dilutions, and I mixed a part of boiled milk with four or five parts of water, or rather of a thin cereal decoction. The latter have at last been recognized as correct, even by Heubner, whose main labors for years have been spent on studying and discussing the question of artificial infant food. But he still sets his face against what he calls "Jacobi's exorbitant dilutions." In the light of what I have had the honor of saying to-night, I profess to have even in those remote times taught better than I knew. At those times I considered the question of digestion only when I recommended large dilutions. It is only a dozen years ago, perhaps, that I began to consider the question of high dilution of the food of the newly born from the point of view of its beneficence in renal infarction and its consequences. In 1887 I spoke of its indications for the purpose of dissolving and eliminating uric-acid infarctions in my *Intestinal Diseases of Infancy and Childhood*. I can assure, as I said then, that since my advice of greatly diluting the food of the newly born, and giving plenty of water from the beginning, has commenced to be minded, I am sadly deprived of the many cases of gravel, dysuria

* Crystals of hæmatoidin (=bilirubin) were found by Virchow as early as 1847 (*Verhandl. d. Ges. f. Geburtsh. in Berlin*, vol. ii) in the kidneys, the tissues, and the blood of infants who died while suffering from icterus neonatorum. Their main location is in the renal epithelium and in the uriniferous tubes, but rarely in the urine. They are also found in the fibrinous coagula of the heart, in the parenchyma of the liver (Orth), and in the adipose tissue of the omentum (Neumann). Even in macerated fœtuses they were met with by Neumann and Ruge. It appears, therefore, that at the time of birth, and soon after, bilirubin exists in the blood and tissues (with or without jaundice) in a sufficient quantity to permit its getting free in crystalline form even after death. The presence of genuine uric-acid infarctions is not influenced by this phenomenon and they and bilirubin may occur simultaneously or separately.

shrieking spells, and consecutive nephritis which were so common in former times.

The connection of *icterus* of the newly born with local changes in the kidneys is of vital interest. In the adult this intimate dependency upon each other is rare, though many gross anatomical changes are equally found in all ages. To that class belong septic infection, syphilis of the liver, cirrhosis of the liver of whatever origin, obliterations of the biliary ducts, thrombosis of the portal vein, and catarrh of the duodenum and choledochus duct.

In the newly born many undoubted cases of icterus are due to the destruction of red blood-cells in the first few days, and to the transformation of hæmatin into hæmatoidin (identical with bilirubin). Some of the latter comes from the many ecchymoses and stagnations, both in the skin and the subcutaneous tissue, due to the process of parturition.

The destruction of blood-cells in the newly born is a normal occurrence. According to Hayem and Hélot the blood-cells of the newly born are subject to rapid disintegration. According to Hofmeier the normal congregation of the blood-cells is absent; they exhibit a greater resistance to solving liquids; the number of leucocytes is very changeable, and the size of the blood-corpuscles is very variable. Silbermann found many blood-cells pale, others of normal color in their periphery only; many of various sizes—macro- and microcytes. He also met with nucleated blood-cells in the liver, the spleen, and the bone marrow; with cells of the liver, sometimes also of the spleen, and of the bone marrow containing blood; with red bodies of the club and biscuit form, evidently changed blood-cells; and finally an increase of leucocytes. All of these observations appear to prove the destructibility of the blood of the newly born, which is only equaled, or perhaps even surpassed, by the effect of chronic poisoning, in part observed for experimental purposes.*

By many the jaundice of the newly born is attributed to absorption of bile into the blood directly from the biliary ducts into the small vessels of hepatic circulation. By others a congenital narrowness of the choledochus duct or an accumulation of mucus in the biliary ducts, or œdema of the periportal connective tissue, or venous obstruction in the liver and consecutive compression of biliary ducts were claimed as the causes of jaundice. Quincke explained it by the patency of the ductus venosus Arantii, and by absorption of bile from the meconium of the intestines.

Meconium is rich in bilirubin. The latter is stored in it during and after the third month of intra-uterine life. Biliverdin accompanies it to such a large amount that Simon (*Arch. f. Gynäk.*, 1875) met with four per cent. of it.

This bilirubin and biliverdin are very liable to be absorbed through the open ductus venosus Arantii, which remains patent in seventy-seven per cent. of all the newly born until after the first week of their lives. Its circulation is free, its blood liquid, and there is a direct communication from the intestinal circulation with that of the vena cava.*

Through the open ductus venosus Arantii the coloring matter of the bile enters the circulation of the whole body, circumventing the liver to such an extent that in some cases of icteric newborn infants it does not participate in the jaundice at all, and produces different degrees of icterus. When peristalsis is active, circulation and absorption are so in proportion, and icterus is early; when peristalsis is but sluggish, and meconium retained unusually long, icterus may appear at a late period. In premature babies the ductus venosus is large, and jaundice liable to be early and very intense. When Elsässer, however, found it closed in three cases no jaundice was observed. Immediately after birth the coloring matter of the bile is considerably increased, and therefrom results another additional cause of jaundice. Besides, as it has been stated, there is no period of life in which under normal circumstances so many blood-cells undergo rapid disintegration. Therein lies another cause for the formation of bilirubin, and for a direct thrombotic interruption of circulation in the smallest blood-vessels. Finally, there is no period of life when elimination is less active than during the first days of life. At that time the urine is very scanty, the water supply mostly neglected, and the accumulation of effete material the rule.

Moreover, bilirubin is but scantily dissolved in the fluids of the tissues of the newly born; even in strongly alkaline solutions it is but slightly soluble, according to Hoppe-Seiler. Thus it is that the coloring matter of bile is met with in the urine of the newly born in the shape of the yellow masses (*masses jaunes*) which have already been mentioned in connection with urinary infarctions.

When the absorbed and deposited masses are but scanty they may be eliminated without any symptoms. When there is enough of them to result in a local irritation, they will cause albuminuria, which is often found in ill-nourished icteric babies. When there is enough to cause thromboses, which are quite common in the capillaries of the portal system, and obstruction of circulation, they give rise to hæmorrhages or to inflammations. As far as the kidneys are concerned, there is a peculiar anatomical reason why nephritis is very liable to appear in the very young.

* Toluylendiamine, according to Afanassiew and Stadelman, exhibits the following results: Dissolution of red blood-corpuscles and consecutive hæmoglobinuria; increase of the coloring matter of the bile; anæmia; moderate fatty degeneration of the large glands; acute parenchymatous nephritis; destruction of renal epithelia. At the same time the epithelia of the spleen and liver are seriously damaged either directly by the (experimental) poison or by the circulation of an altered blood. The urine contains copious conglomerate crystals, which probably are not organic, but consist of calcium sulphate.

* Some communication of the same kind, with the same effect, is brought about between the hæmorrhoidal plexus of the rectum (through the hæmorrhoidal vein) and the vena cava, thus circumventing the liver. Still, it must be remembered that less absorption takes place in the rectum than in the rest of the intestinal tract. Absorption is very much more active in the upper part of the large intestine. Kühne knew, 1868 (*Physiol. Chem.*), that icterus may originate in absorption from the colon; and in the small intestines both the amount of meconium and the absorbability of its bilirubin and biliverdin are much greater.

The post-fœtal growth of blood-vessels and tissues varies considerably. It is least in the common carotid, largest in the renal and femoral arteries. The renal artery and the kidneys, however, do not develop proportionately; the transverse section of the former increases out of proportion to the volume and weight of the latter. Thus it seems that this disproportion between the size of the artery and the condition of the renal tissue establishes a predisposition to congestive and inflammatory conditions of the organ. Moreover, the resistance in the capillary net of the young kidney is unusually great. Experiments prove that the permeability of the capillaries is greater, and that within a given time a proportionately larger amount of water can be squeezed through them in the adult than in the young. This anatomical difference seems, therefore, to be an additional reason why renal diseases are so much more frequent in infancy and childhood, from all causes, with the only exception of that which is reserved for the very last decades of natural life—viz., atheromatous degeneration.*

In conclusion, Mr. President, permit me to recapitulate in a few words the main points of this paper:

Nephritis is a frequent disease of infancy and childhood and by no means very rare in the newly born. What was formerly considered mere albuminuria, or a transient form of it, we have been taught by improved methods of investigation, mainly by the use of the centrifuge, to recognize as nephritis. A predisposition to nephritis in the young is caused by the fragility of the blood-vessels in the newly born; by the relative imperviousness of the young renal capillaries compared with the large size of the renal arteries; by the feebleness of the young intestinal muscle, which proves insufficient to expel toxic contents; by the extensiveness and size of the young intestinal blood-vessels and lymphatics and the large size of the villi, all of which favor the absorption of toxines.

From an ætiological point of view, nephritis in the newly born may be:

1. *Congestive* (from feeble circulation, congenital heart disease, asphyxia, or exposure to low temperatures).

2. *Obstructive* (from the physiological rapid decomposition of the blood of the newly born; the formation of hæmatoidin=bilirubin; jaundice; the production of methæmoglobin by chemical poisons, such as potassic chlorate, or by excessive heat; or the presence of blood in the uriniferous tubes).

3. *Irritative* (from the presence of uric-acid infarctions or hæmatoidin infarctions, of purpuric or other interstitial hæmorrhages, or of microbes and toxines in the numerous eruptive and infectious maladies and in enteritis).

The Society of Medical Jurisprudence.—At the last meeting, on Monday evening, the 13th inst., the special order was a paper entitled The Judicial Treatment of the Criminal should not be Considered as Punishment, by Dr. Edward F. Brush.

* Heart and Blood-vessels in the Young. By A. Jacobi, M. D., *Brooklyn Med. Jour.*, March, 1888.

Original Communications.

VENOUS PHENOMENA.

By ALOYSIUS O. J. KELLY, A. M., M. D.,
PATHOLOGIST TO ST. AGNES HOSPITAL;
PATHOLOGIST AND CLINICAL ASSISTANT TO THE NEUROLOGICAL DEPARTMENT, PHILADELPHIA POLYCLINIC;
ASSISTANT TO THE MEDICAL DISPENSARY AT THE HOSPITAL OF THE UNIVERSITY OF PENNSYLVANIA.

By venous phenomena we understand the manifestations of the normal venous equilibrium and the pathological deviations therefrom. These vary in kind and in degree. The most common and the most readily recognizable deviation from the normal exhibited by the veins is that of increased fullness, which may be either general or local. The latter condition interests us here not at all, and the former only in so far as under conditions of increased fullness all the other venous phenomena to be studied are much more manifest, more pronounced, and more easy of demonstration and comprehension. This condition of general congestion or overfullness of the veins may be due to a variety of causes, and always occurs when for any reason whatever the right heart no longer possesses the power to properly empty itself at each contraction. This defect may be auricular, ventricular, or auriculo-ventricular, and depend upon a diminution of cardiac power or an increase of the resistance offered to the flow of the blood. The primary cause producing this defect may lie within the heart itself, and be valvular disease, myocarditis, etc., or it may be disease of the pericardium, pericarditis, or hydropericardium, or it may be entirely extra-circulatory, emphysema, pleuritis with effusion, etc., or, finally, it may be a combination of any of these. The more pronounced grades of venous distention, however, attend conditions of paresis of the right ventricle following long periods during which it has been responding to excessive demands, in consequence of which it has become hypertrophied and dilated; therefore, in advanced stages of mitral and tricuspid disease, pronounced emphysema, and the like. General venous distention may also be due to that rarer condition of mediastinal tumor formation whereby the outflow of blood from the venæ cavæ is hindered.

Under circumstances favoring general overfullness of the veins all the veins of the body are subject to conditions which, were it not for others, would cause the individual veins to show a distention proportionate to their size, situation, and distance from the heart. Many of them, however, because of their deep situation, are ordinarily beyond the limits of our examinations; and, as the farther distant from the heart the less appropriate in general is the vein for the study of certain phenomena, our investigations are usually confined to the internal and external jugular veins. The former, coursing under the sterno-cleido-mastoid muscle to the outer side of the internal, later common, carotid artery, is, in normal individuals, not demonstrable; the latter, unaccompanied by an artery in its superficial course, can often—not always, especially not in fat persons—be detected as a small cord descending from the angle of the jaw to the middle of the clavicle, crossing the

sterno-cleido-mastoid muscle, and usually becomes more prominent or is first brought to view by directing the head to the opposite side of the body.

In studying various venous phenomena it is of importance to bear in mind the valves with which the veins in this locality are provided. At the junction of the jugular with the subclavian vein, at that part known as the bulb, there is a pair of valves usually designated the bulbar valves. They are commonly on a level with the sterno-clavicular articular; at times, especially as a result of overdistention of the veins, as much as three quarters of an inch or an inch higher. The external jugular vein is provided with valves at its entrance into the subclavian, and at times again at a point about an inch and a half above the clavicle. The subclavian vein has valves just distal to the point of entrance of the external jugular vein. These veins are all doubtfully competent and are often absent.

There are various other conditions which accompany—sometimes manifest themselves prior to—the overdistention of the veins: œdema, which renders more difficult the examination of the veins of the part affected; effusions within the several serous cavities; cyanosis; and those conditions due to congestion of the liver, spleen, kidney, and gastro-intestinal tract. These are not to be further dwelt upon.

Systematic examination of the veins discloses the fact that they are the seat of movements of two sorts, readily distinguishable the one from the other: 1. Those due to the action of the heart. 2. Those dependent upon the movements of respiration. Together they share the characteristic that they are more marked when the veins are the seat of overdistention.

The earlier writers on the subject of venous pulsation were accustomed to distinguish between venous undulation and venous pulsation, both of which were pathological. Bamberger (1), to whom we owe the first graphic description of the venous pulse, insisted upon this distinction, as did also Friedreich (2), Rosenstein (3), Eichhorst (4), and various others who had recorded scattered observations. Venous pulsation was asserted to be a condition more marked than venous undulation, but the essential difference lay in the fact that by compressing the jugular vein in the middle of its course the movements, if simply undulatory, would cease, whereas if pulsatory they continued unchanged in that part of the vein central to the point of compression. Venous undulation was an indeterminate pulsation. And opinions were divided as to the significance to be attached to venous pulsation. While many united with Bamberger in the assertion that jugular pulsation was a pathognomonic sign of tricuspid insufficiency, others, with Friedreich, held that such a pulsation could occur with insufficiency of the jugular bulbar valves alone, and that insufficiency of the tricuspid valves was not a condition necessary to its development. Bamberger maintained that insufficiency of the bulbar valves never occurred independently of insufficiency of the tricuspid valves. As, however, both venous undulation and venous pulsation consisted essentially in a rhythmic increase and decrease in the size (volume) of the vein, and as the line of distinction between the two was mostly fanciful, certainly indeterminate, there undoubtedly existed cases in which it was impossible to say whether or not the venous movement was undulation or pulsation, and as the conditions which were supposed to produce the one or the other could not be distinguished clinically, the terms were certainly inappropriate. Following the investigations of Mosso (5), Gottwald (6), Geigel (7), and especially Riegel (8), the expression undulation fell into disuse, and should assuredly be no longer employed. Worthy of note is it, however, that Guttman (9) and Liebermeister (10) still insist upon its use. Were its application restricted to such, it might be employed to designate venous pulsations of indefinite character, but even under such circumstances its employment could not but be attended by confusion, and would be at most but a cloak for ignorance. Venous pulsations, then, are all autochthonous movements of the veins, occurring synchronously with, and dependent upon, the action of the heart.

Venous pulsations—and I refer to all venous pulsations, but especially to those in the jugular veins—are to be distinguished, first, from pulsations of the neighboring artery. A pulsation affecting as it does most frequently the external jugular vein is readily recognized as venous. More difficult is it when the pulsation affects a deeper vein, as the internal jugular, which we can not examine so directly. But the distinction can usually be made with but little difficulty. On inspection, the slow, interrupted vessel diastole; the greater surface distribution of the pulsation, due to the much greater breadth of the vein; the peculiar undulatory transmission of the pulsation along the vessel, due to the lesser tension in the veins; and on palpation the sensation of slight active power producing the pulse, due also to the latter cause, serve to distinguish venous from arterial pulsations. The arterial pulse wave, of course, travels centrifugally, therefore in the carotid artery from below upward, but normally this occurs so quickly that to the eye there is no indication whatever of it. In the (pathological) venous pulse, however, especially in the pulse affecting the external jugular and other superficial veins, one often observes a quiet apparent filling up from below.

Venous pulsations have been classified as the true and the false; but while the terms are somewhat misleading, and, in conformity with our definition of venous pulsation given above, inappropriate, they demand a word of explanation. The true venous pulsation is produced by causes operating within the vein—it is autochthonous; the false venous pulse is due to extravenous causes and is a pulsation communicated from a neighboring artery, and is most appropriately so styled. The distinction between the two is made: 1. By compressing the artery at a point as near the heart as possible. Under such circumstances the venous pulsation, if it be communicated from the artery, ceases; if not, if autochthonous, it continues unchanged. 2. By compressing the vein in the middle of its course conveniently with the finger, pencil, or barrel of a stethoscope. If the pulsation be communicated from the artery, it ceases in the central empty part of the vein or diminishes very much in intensity, at such times not ceasing entirely, as smaller

veins may empty into the one under observation centrally to the point of compression. In that part of the vein peripheral to the point of compression the pulsation continues, usually increasing in intensity because of the congestion. (Consult distinction between normal and pathologic venous pulse.) The assertion of this fact that venous pulsation did not necessarily indicate disease of the heart, but might be due to pulsation communicated from a neighboring artery, was made as long ago as 1830 by Hodge (11). Though he imperfectly understood the mechanism, he recognized the fact.

Historically, it is of interest that Walther Charleton in 1792 is said to have recognized the occurrence of pulsation in the vena cava after opening the bodies of living animals, and that similar pulsations in the jugular veins were noted by Haller, Stenonis, Morgagni (cited by Beyer (12)). But although Mosso had previously drawn attention to the occurrence of a negative or physiological venous pulse in man, to Riegel in particular, but also to Gottwald, is due the credit of proving beyond peradventure the falsity of the then generally accepted view, that normally the veins manifest no pulsatory movements. Riegel, by his careful and painstaking investigations conducted on dogs and rabbits, was able to demonstrate in normal animals the occurrence of movements of the veins independent of those changes of fullness due to the phases of respiration, exercise, and the like. This has since been designated the normal, or physiological, or negative venous pulse, in contradistinction to the later-to-be-described pathological or positive venous pulse.

The normal venous pulse is distinguished especially and essentially by the time of its occurrence, and also, but subordinately, by compressing the vein in the middle of its course. This pulse is demonstrated when, on compressing the vein in its middle, the pulsations both above and below the point of compression cease or become very much diminished in intensity, never becoming more pronounced. The diminution in intensity of the pulsation, or its total cessation in that part of the vein central to the point of compression, proves that the pulse was not produced by any backward propulsion of the blood from the heart; and its cessation peripherally to the compression indicates that it could not owe its origin to any pulsation communicated from the neighboring artery, the only explanation of its production being that in the various phases of the heart's action the flow of the blood through the veins has been rhythmically slowed and accelerated. The truth of this supposition has been abundantly proved by Riegel, Gottwald, etc. It would naturally be supposed that a pulsation in any vein not due to any retrograde propulsion of the blood from the heart would cease in that central part of the vein following its compression in the middle of its course; but the difficulty of accomplishing total obliteration of the lumen of the veins, especially of the large and deeply seated veins, and the fact that smaller veins may empty into the larger one centrally to the point of compression, explain the occasional persistence of pulsation (necessarily diminished in intensity) following the compression. The normal venous pulse has also been designated the negative venous pulse, in contradistinction to the positive (pathologic) venous pulse; negative in the sense that it is not due to any positive action of the heart causing a retrogression of the blood (which certainly does not occur), but that because of the action of the heart the flow of the blood in the veins is rhythmically slowed and accelerated.

In making exact observations regarding the venous pulse, the sphygmograph is of the utmost importance (Sansom (13)), but clinically, for matters of diagnosis, venous pulsations may very well be studied without its employment. While with our eyes we watch the various phases of the venous pulsations, a finger on the carotid artery of the same or of the opposite side of the body furnishes information regarding the arterial pulsatile movements. Thus clinically studying the venous pulse, we may at first fancy that it occurs simultaneously with the carotid beat, but by careful attention we can usually distinguish between the time of the occurrence of both, especially by noting whether the venous pulse persists longer than the arterial pulse or distinctly comes to an end sooner than it. We do not compare the venous pulse in time of occurrence with the apex beat, as between the two there is an interval sufficient to thus vitiate one's observations. While in studying arterial pulse tracings we usually direct our first attention to the ascending limb as being the less complex, for similar reasons, in studying the phlebogram, the descending limb is more appropriately the subject of first consideration; and I am certain that clinically we can gain much more useful information, and acquire it much more readily, by noting the time of the venous collapse than in endeavoring to fathom the varying and often markedly irregular venous diastole.

Simultaneous sphygmographic tracings of the normal carotid and jugular pulsations reveal such curves:

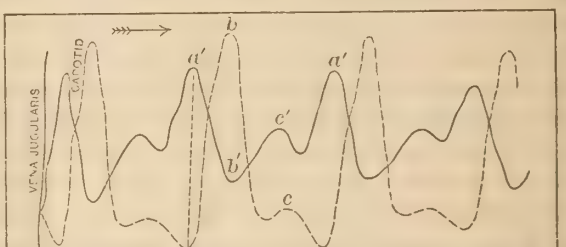


Fig. 1.—Negative (diastolic-presystolic) venous pulse. After Riegel and Sahli

The resemblance which the phlebogram bears to a reversed arterial sphygmogram, and *vice versa*, is at once evident. The ascending or anacrotic limb of the venous pulse tracing is dicrotic—therefore called anadicrotic; the descending or catacrotic limb is monocrotic—therefore catamonocrotic. We notice further that with the occurrence of the ventricular systole (or carotid diastole) the vein collapses. We therefore speak of the (cardiac) systolic venous collapse; or the normal, physiological, or negative venous pulse is said to be cardiac diastolic—more properly diastolic-presystolic.

The actual causes of the various phases of this normal venous pulse have long been a matter of discussion. It has been asserted that the venous collapse is due to the

ventricular systole, and again that the primary wave of the anacrotic limb of the phlebogram is dependent upon the same cause. Both of these statements as such are, however, erroneous. In endeavoring to explain the mechanism of the venous diastole and systole there are various factors which must be taken into consideration, and any explanation which does not include them all is incomplete. That the ventricular systole as such does not cause the venous collapse, is evident from the facts that at the time of the systole the auricle and the entire venous system are separated from the ventricle by the closed tricuspid valve; and that the systolic diminution in the size of the heart and the consequent increase of the negative intrathoracic pressure alone can not be the cause of the collapse, is also evident from the fact that these pulsations persist—though diminished in intensity—after opening of the thorax (in animals). This factor (meiocardia), however, exerts a certain influence, as at the time of the systole of the heart there is not only some increase of the intrathoracic negative pressure, but likewise an increase of the intrapericardial negative pressure—a much more potent factor. It has been asserted that during the cycle of its movements the heart does not suffer any alteration in volume; that though it may change in shape it does not vary in volume, and that there consequently occurs no change in the intrathoracic (intrapericardial) negative pressure, as during a given time as much blood flows into the heart through its efferent vessels as flows out through the afferent vessels. But this is not true. Ignoring the change in the volume of the heart due to the alternating systole and diastole of the auricles and ventricles which differ much in muscular substance, there must nevertheless occur a variation in the volume of the heart due to the circulation of the blood. The blood leaves the heart intermittently in jets at the time of the systole, while the blood returning to the heart but rhythmically suffers interruption in its flow, if ceasing to flow at all, these pauses (?) never being so great as those which mark the arterial circulation.

But the venous collapse is due to the auricular diastole primarily, to this change in the volume of the heart secondarily. At the time of the auricular diastole, occurring as it does synchronously with the ventricular systole, at which time occurs also meiocardia, with increase of the negative intrathoracic (intrapericardial) pressure—auricular aspiration—the venous blood which previously has suffered an impediment to its progress is suddenly let free; hence the sudden cardiac systolic venous collapse, a' b', which, however, does not continue during the entire systole reckoned to the time of the closure of the semilunar valves. Nor does the ascending limb of the arteriogram continue until the closure of the semilunar valves.) Rather toward the end of the systole there occurs an ascent in the venous tracing, and beginning here we have difficulty in properly apportioning the various factors now exerting their influence. Commencing with the point b', the heart is still in systole—momentarily inactive just previous to its dilatation—and offers a resistance to the further progress of the blood into the now filled auricle. Then commences the ventricular diastole, at which time begins the so-called aspiratory action of the right ventricle, or, otherwise expressed, the diastolic removal of the late systolic existing impediment to the flow of the blood, and the oppositely acting auxocardia, both of which are supplemented toward the close of the cardiac diastole by the contraction of the auricle. All these factors, with the single exception of the least influential—the aspiratory action of the right ventricle—exercise a restraining influence on and impede the progress of the blood, occasioning the ascending limb of the venous tracing, b' a'—the normal venous pulse. The primary wave, b' c', is caused by these various factors hindering the circulation of the blood through the now filled auricle, the depression at c', which varies much in degree and is usually synchronous with the closure of the semilunar valves—the beginning of the ventricular diastole is due to the momentary influence of the so-called aspiratory action of the right ventricle, which just at this time is most active; while the secondary wave, more pronounced than the primary, is caused by the auricular contraction; following which, conditions are again favorable for the sudden venous collapse. It is quite possible that because of the auricular systole a small quantity of blood may suffer retrogression into the vena innominata, restraining which there is the asserted synchronous contraction of the walls of the venæ cavæ, but there never occurs under normal conditions any retrogression as far as the jugular valves, as the intrathoracic veins are quite capable of accommodating any small quantity of blood which may possibly be normally retrograded. But the proposition of any theory of retrogression is entirely unwarranted, as the production of the venous pulse is sufficiently accounted for upon the supposition of its dependence solely upon the various phases of the heart's action. The normal venous pulse, then, is not in any measure whatever due to any insufficiency of the tricuspid or jugular bulbar valves, or to any retrograde movement of the blood, nor is the cardiac systolic venous collapse due to any systolic descent of the auriculo-ventricular plane, as suggested by Pramberger (14); but the normal venous pulse is simply the venous expression of the phases of the normal cardiac action whereby the circulation of the blood in the veins is rhythmically accelerated and impeded. Of course, the character of the normal venous pulse may differ greatly in different subjects, as do also its form and size, being due to various degrees of congestion, cardiac power, quickness and rapidity of cardiac contractions, and the like; but the feature by which alone it is to be distinguished—the time of its occurrence—never changes; the pulse is always diastolic-presystolic.

This normal or negative venous pulse is always to be observed in animals—dogs and rabbits—after exposure of almost any, but especially the intrathoracic and jugular veins, and can occasionally be seen in human individuals in perfect health, but especially in those suffering with chlorosis or marked anæmia, or in those who for any reason are the subjects of venous congestion. Its occurrence in pregnant women has been particularly commented upon by Mackenzie (15), who also directs attention to its seemingly rather frequent presence in the veins of fat people. The appellation normal venous pulse is open to objection,

as the pulse is frequently observed in persons who certainly can not be said to be in perfect health. Its retention is, however, warranted, to emphasize the fact of the presence normally, in the veins, of a pulse. It were better to designate the pulse by the time of its occurrence. While thus comparatively of little diagnostic importance of itself, this pulse is particularly to be studied and understood to distinguish it from the pathologic venous pulse.

The pathological or positive venous pulse is also to be distinguished purely by the time of its occurrence, without regard to its size, form, or other characteristics. The positive venous pulse is thus represented sphygmographically:

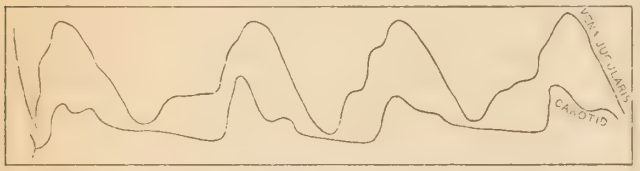


Fig. 2. Positive (presystolic-systolic) venous pulse. After Riegel.

It is always cardiac systolic, more properly presystolic-systolic—that is, with each ventricular contraction there is a positive retrogression of the blood, which manifests itself in the jugular veins by the production of a pulse synchronous with the carotid beat. This pulse is usually anadicrotic-catamonocrotic, in this respect resembling the normal venous pulse. Not unfrequently it is anatricrotic. With the auricular systole, again with the ventricular systole, there occurs a distention of the vein, which distention is caused by a retrograde movement of the blood. And as no ventricular systolic retrogression of the blood, consequently no systolic distention of the vein, can occur with competent tricuspid valves, the presence of a positive venous pulse is pathognomonic of tricuspid insufficiency. Presupposing a tricuspid insufficiency, during the ventricular systole there are available for the blood two avenues of egress: First, through the pulmonary orifice into the pulmonary arteries; secondly, through the opening caused by the incompetent tricuspid valves into the right auricle. It is this latter stream of blood which causes the cardiac systolic venous distention, the positive venous pulse, pathognomonic of tricuspid insufficiency. One may frequently notice an increased or supplemental wave synchronous with the closure of the semilunar valves. Following this closure there is but one outlet for the blood—through the incompetent tricuspid valves—and the sudden cessation of the availability of the other outlet is frequently rendered evident by some increase in the pulse wave. The venous collapse in such cases occurs synchronously with the carotid systole; it is cardiac diastolic. In all cases of tricuspid insufficiency, however, we are not favored with such a typical or well-marked pulse tracing as that represented in the figure. The first elevation due to the systole of the auricle is not always followed after an interruption by a second. Often the tracing shows but a slight elevation, or may be continued as an almost horizontal line, but it never shows a descent until the commencement of the diastole of the heart. These various differences in the form of the venous pulse are due to various degrees of venous congestion, extent of tricuspid insufficiency, paralysis of the right side of the heart, and to the fact that normally at the time of the ventricular systole the blood tends to the auricle, it being in diastole and assisting in producing the normal systolic venous collapse. At such times the force propelling the blood from the ventricle into the auricle may be deficient in quality, and the blood itself insufficient in quantity, to cause a manifest increase of the already produced presystolic wave. But these variations in the form of the pulse are of minor importance; the pulse is recognized upon the determination of the time of its occurrence. And, as before remarked, the most valued information is usually to be gained by first studying the time of the venous collapse, that of the positive venous pulse occurring synchronously with the carotid collapse.

The foregoing remarks may be applied to the much less frequent jugular bulbar pulse, the occurrence of which presupposes intact jugular valves. Normally, at the time of the auricular systole there never occurs any retrogression of the blood as far as the jugular valves, admitting that it may occur to some slight extent in the vena cava and vena innominata. In states of venous congestion the retrogression of the blood to the jugular valves may be quite manifest; but, no matter what the degree of congestion, the jugular bulbar pulse can not differ from the already described venous pulse. With competent tricuspid valves the pulse can be none other than the negative or diastolic-presystolic pulse, while the occurrence of a tricuspid insufficiency may give rise to the development of a true systolic pulse. In this latter case there may occur above the bulbar valves various sorts of venous pulses, from a modified negative pulse with competent bulbar valves to a marked positive pulse depending upon the degree of the ensuing bulbar valve incompetency. In cases, however, favoring the development of these pulses, the bulbar valves remain but shortly competent, and this pulse alone is seldom observed. The pulse is, however, frequently more marked at the bulb than elsewhere. Tricuspid insufficiency unattended by incompetency of the bulbar valves is a rarity.

Pathognomonic of tricuspid insufficiency though it is usually said to be, there are, however, two other conditions to which theoretically a positive venous pulse may owe its production. I allude, first, to the occurrence together of a mitral insufficiency and a patulous foramen ovale—certainly a rarity, but a combination of conditions which may give rise to a cardiac systolic venous pulse. Under such circumstances the blood during the ventricular systole would be subject to retrogression through the incompetent mitral valves, hence through the patulous foramen ovale to the right auricle and the venæ cavæ, here producing a positive venous pulse, which would be further transmitted throughout the venous system as conditions favorable to this were present (Ritter (16)). Secondly, I allude to cases of varicose aneurysm of the aorta and superior vena cava. This morbid condition being present, the heart at each ventricular contraction propels the blood into the aortic aneurysm whence it may find its way to the superior vena cava, giving rise in that vessel to a systolic pulsation which will b

propagated along the venous system to a varying extent. Concerning this interesting and rare condition Pepper (17) and Griffith have contributed a very valuable paper, but seem not to have directed particular attention to any venous pulsation. (Consult also Bruce (18.)) In neither of these morbid states, however, are the conditions so simple or the circumstances so favorable for the production of a positive venous pulse as in the case of a tricuspid insufficiency, whereby we explain modifications to which the pulse may be subject, and the greater difficulty attending its production and detection.

(To be concluded.)

CARDIAC DISEASE DURING PREGNANCY AND LABOR.*

By JULIUS ROSENBERG, M. D.,

OBSTETRICIAN TO THE MOTHERS' AND BABIES' HOSPITAL; LECTURER ON OBSTETRICS IN THE NEW YORK POLYCLINIC.

It appears strange that a subject so interesting and important should have received so little attention from both the obstetrician and the general physician, and that the majority of text-books pass it by with but a few remarks, rarely devoting more than half a page to its discussion.

Perhaps the cause for this may be found in the fact that the mild cases of cardiac disease are frequently overlooked, while the ending of the severe types is mostly so melancholy as not to tempt to publication.

My experience with pregnancy and labor complicated by marked valvular lesions consists of two cases, both of which ended fatally. I consider it my duty to report these cases in the hope that their free discussion may be an aid to me as well as to others:

Case I.—I was called to see a woman, aged twenty-two years, who was in labor with her first child. The woman had been in pains fifty hours, the os was fully dilated, and the head in the outlet. The pains were feeble, and there had been no progress for some time. A distinct systolic murmur could be heard over the apex. She had slight œdema of the face and extremities. The urine was normal. It was desirable that labor should be terminated, and after chloroform administration the forceps was applied and a living child easily extracted. The placenta was expressed in due time, and the progress of the case appeared to be perfectly normal, when the patient suddenly became cyanotic and the pulse rapid and irregular, and in spite of every restorative measure she died three hours post partum.

A careful post-mortem showed fatty degeneration of the heart and chronic endocarditis. The mitral valves were thickened and insufficient. No pulmonary embolism was found, and the mitral lesion appeared to be the sole cause of death.

Case II.—My second case was more fully observed, and its interesting history is briefly the following: A primipara, aged twenty-nine years, consulted me when six months pregnant. She had had chorea during childhood, which had left her with a damaged heart. She was subject to atonic dyspepsia manifesting itself by swelling of the epigastrium and violent eructation of gas. She suffered much from dyspnœa and became cyanotic upon the slightest exertion. The urine was normal. A physical examination showed the heart to be hypertrophied, the apex displaced toward the left side, and the cardiac impulse enormously intensified. There were presystolic and systolic murmurs, the latter loudest over the apex. She had a mild bronchial catarrh and œdematous swelling of the face and extremities.

The seriousness of the case was quite clear to me, and I endeavored to improve her condition as much as possible. I ordered strychnine, strophanthus, and digitalis to aid the laboring heart, and diluted hydrochloric acid was given with a view to inhibit the fermentation in the stomach, which was to her the most distressing symptom. Every violent exertion was absolutely prohibited. Under this strict *régime* her appetite, sleep, and general appearance certainly improved. The urine was repeatedly examined, and remained normal for some time. At the end of the seventh month albumin appeared, but casts were absent. She also complained of disturbed vision, headaches, and a numb sensation in her arms. The œdema and bronchitis had become more marked. A strict milk diet and small doses of calomel were ordered, which caused a rapid subsidence of these symptoms, but the diet was continued. I often thought of the advisability of inducing premature labor and giving relief to the damaged heart by emptying the uterus, but the experience of others had been very unsatisfactory, and I therefore concluded that her chances were best by letting pregnancy continue, hoping that labor, as is usually the case, would come on before full term. As the woman neared the end of gestation venous obstruction became more marked; this manifested itself by an increasing œdema, slight albuminuria, and the presence of fluid in the pleural cavities. But the dyspepsia gave rise to the most distressing symptoms. I have never before or since witnessed such enormous eructations of gas.

Labor commenced prematurely at the beginning of the ninth month. The pains were good from the outset and the os was dilated well. The vertex presented. The fœtal heart sounds were normal. The patient was very cyanotic and suffered much from dyspnœa. I gave small doses of nitroglycerin and strychnine and administered oxygen gas, which afforded much relief; yet in spite of this active stimulation her pulse grew rapid and feeble and her general appearance was very alarming. I therefore concluded, although the os was not fully dilated, to apply the forceps and terminate labor. A near relative of the lady, who is a well-known physician, kindly assisted me and administered a small quantity of ether. I rapidly dilated the cervix, applied the forceps, and easily extracted a living boy. The uterus contracted well and the placenta was expressed twenty minutes later. The heart continued to act poorly, and nitroglycerin, camphor, and digitalis were injected as often as necessary. After a while her condition improved so much that my colleague left to attend to some urgent calls, while I remained with the patient. She continued fairly comfortable, with a good pulse of about 110 beats, the breathing was easy, and the only alarming symptom was the increasing collection of gas in the stomach, which caused her much distress and pain over the præcordia. Four hours after the birth of the child, while conversing with her mother, she had a sudden convulsive movement of the face and respiration stopped. Artificial respiration and other restoratives were useless—a sudden failure of the heart had closed the scene.

One might *a priori* suppose that marked pathological changes of the heart would form a most serious complication of pregnancy and labor, and a study of the publica-

---

* Read before the Section in Obstetrics of the New York Academy of Medicine, May 23, 1895.

tions pertaining to this subject leaves certainly no doubt in the reader's mind. If we exclude the milder cases, which do not seriously complicate pregnancy, and only consider pronounced mitral and aortic lesions, we find that a large percentage ends fatally, as the following figures will prove:

	Total.	Mitral.	Deaths.	Per cent.
McDonald	28	20	17	60
Wenner	77	?	38	37
Lublinsky	7	4 mitral, 3 aortic.	4 1	100 33
Schleyer	25	?	10	40
Leyden	20	16	11	55

To understand better the seriousness of heart disease during pregnancy and labor it is necessary to briefly recall the changes which take place in the heart's action under normal conditions. Throughout pregnancy the heart must perform an increased amount of work, and it was long supposed that a compensatory hypertrophy of the left ventricle was supplying the required additional force. Löhlein first showed that such an hypertrophy did not exist, and he says that the healthy heart is capable of performing additional work without an increase of muscular tissue.

During labor we have three main factors which strongly influence the heart's action. Every uterine contraction produces a variation in the blood pressure and demands a new adjusting of the heart's machinery. The nervous influences of pain and excitement manifest themselves by an acceleration of the pulse during a pain, and finally there comes the momentous revolution in the circulation from the emptying of the uterus, by which the circulatory area is largely decreased.

Spiegelberg believed the pulmonary vessels and the right heart to be the receivers of this added blood quantum, while Fritsch thinks that the decreased abdominal pressure produces an overdistention of the abdominal veins. This allows an inadequate blood supply to the right heart, which shows itself by the anæmic pulse of the recently confined woman.

A careful study of the literature results largely in favor of Spiegelberg's hypothesis, and in my cases there was never the slightest symptom of anæmia. The only alarming features were those due to an embarrassed pulmonary circulation.

While the healthy heart can accommodate itself to these various conditions and demands, one weakened by disease is frequently not able to withstand the additional strain. Such a heart does not possess the normal amount of reserve power, and to supply the required force there results a compensatory hypertrophy. But hypertrophy and compensation have their limits, even in the non-pregnant state, and if it is remembered that during gestation the blood is generally in an impoverished condition, imagination need not be very vivid to understand how easily a fatty degeneration of the heart may ensue. This is especially likely to happen in the chronic cases in which the heart has been below par a long while before impregnation occurred. The inadequate compensation is the main cause for the serious symptoms which always threaten and often manifest themselves during the latter months of pregnancy and produce the fatal ending of many cases during or soon after parturition.

I think it unnecessary to dwell upon the prognosis of this affection. The reported cases and the aforequoted figures speak for themselves. The prognosis depends upon the extent to which dilatation has advanced and the extent of the endocarditis. The immense risk which a pregnancy imposes upon a woman suffering from heart disease should make it imperative that marriage be forbidden.

But if the physician's warning is not heeded, or if the case is not seen until the last third of pregnancy, what should be our plan of treatment? How are these cases best managed? These are the questions which I shall endeavor to answer.

The earliest symptoms of the disturbed heart's action are dyspnœa, palpitation, œdema of the face and extremities, and bronchitis. To relieve the struggling heart every exertion must be interdicted, and the patient should remain in the recumbent posture the greater part of the day. Frequent examination of the urine is indispensable. A strict milk diet must follow the finding of the first trace of albumin. As to the advisability of the early administration of cardiac stimulants writers are not agreed. It is my opinion that, as we do not hesitate to give these drugs in mitral insufficiency during the non-pregnant state, their administration is all the more indicated when the damaged heart is suddenly called upon to perform an extra amount of work.

In case this mode of treatment is not followed by an amelioration of symptoms and the cardiac incompetency increases in spite of our efforts, the question of the propriety of terminating pregnancy may justly arise. The question whether delivery should be hastened is a grave one. Unfortunately, the hope is delusive that relief may be given by inducing premature labor. The reports of the majority of such cases are reports of failures, and even if premature delivery has been safely performed and the woman for the time being is improved, her condition is yet one of extreme peril from asystolism. Success can only be expected if the pregnancy is terminated *before* the onset of serious symptoms.

The question, then, to decide in a given case is, Will the heart be able to perform its work during pregnancy; will a compensatory hypertrophy keep step with the increasing demands? As for the cases which do not come under observation until grave symptoms have appeared, I shall in the future not hesitate to induce labor at once; if then the case ends fatally, I shall console myself with the belief that the woman succumbed *not through*, but *in spite* of, premature labor.

The next point of importance is the management of labor itself.

To give the heart the greatest possible working space the patient is to be placed in a half-sitting posture, and, as we now approach the most critical period, the heart had better be prepared and toned up for the final race. Alcoholic stimulants, camphor, strychnine, and strophanthus may now be given, and the nitrites are indicated whenever

the pulmonary circulation becomes embarrassed. The main indication is, however, to deliver as soon as possible, on account of the most dangerous effect of the pains upon the heart. These operations must be performed under an anæsthetic, because the mental and physical suffering of an operation without anæsthesia may produce the most serious shock to the heart.

The birth of the child is followed by the momentous changes in the circulation. If one is an adherent of Fritsch's theory, a loss of blood is very serious, while, according to Spiegelberg, a moderate hæmorrhage may be desirable to relieve the embarrassed right heart, which he considers is the immediate cause of heart failure. Tarnier, Berry Hart, and others report cases in which excellent effects from venesection were observed, and, backed up by these authorities, one is justified in trying the treatment. I have administered nitroglycerin with the same object in view. The effects of full doses of nitroglycerin or amyl nitrite are identical with those produced by venesection; they lessen the strain upon the heart by dilating the small peripheral vessels throughout the body.

The expulsion of the placenta should not be hurried, in order to allow the heart to accommodate itself to the altered conditions. The statement has been made that Credé's method is not advisable in these cases, since it is apt to cause too sudden a change in the vascular pressure. It is advised to remove the placenta manually, because the detachment may then be gradually accomplished. As this latter method requires the prolonged administration of an anæsthetic, I would not willingly select it.

This brings me to the management of the lying-in period. During the puerperium the heart demands constant watching, as a large number of cases have ended fatally within a few days or weeks after the confinement. The details of such management it is unnecessary to discuss here. Rest, simple diet, and appropriate stimulants form the rational basis of treatment.

Marked organic lesions of the heart form a most unique complication of pregnancy and labor, as the most skillful treatment can never restore the damaged heart to its normal condition; but their management opens many debatable points; these I have endeavored to present in this paper, and I hope for their free discussion.

24 West Fifty-ninth Street.

A METHOD OF DISCOVERING THE AMOUNT OF BLOOD IN AN ANIMAL.

By JOSEPH HERBERT FORD, B. S., A. M.,
SECRETARY OF THE AMERICAN BUREAU OF MEDICAL LITERATURE, WASHINGTON, D. C.

Of late years there has been practically no investigation into methods which would assist in the determination of the amount of blood in the human organism, because research now interests itself almost entirely with pathology. A few have even ventured to assert that such knowledge would be of but little practical value. But since the first step in the formulation of any system or theory is the acquisition of facts, none can be regarded as worthless, especially in view of the ever-increasing utilization of them. The relative number of white and red blood-corpuscles was for a long time regarded as an interesting fact—nothing more; now it indicates or contraindicates some of the gravest therapeutic or surgical procedures—*e. g.*, splenectomy. One use which may be made of the knowledge of the amount of blood normally in the human organism is the determination of how much of a drug must be injected before it can have a toxic effect upon invading germs. If it has been learned in the laboratory that a certain strength of a drug, say 1 to 5,000, is toxic outside of the body, but in as nearly similar conditions as possible, we can infer at once the exact amount that should be injected subcutaneously in order to make a solution of that strength in the circulating blood. Whether the patient could stand such a dose is another question, but much blind empiricism could be thus avoided. Various other uses of this knowledge will suggest themselves; others less obvious will be learned after longer acquaintanceship with the subject.

The following are the simple procedures employed in determining the amount of blood in a dog. The amount in the human organism may be determined in the same way, or by analogical reasoning from the results obtained upon lower animals.

Venesection is performed upon some convenient vessel—median basilic, internal saphenous, or jugular—and a certain predetermined amount of blood is withdrawn into an aspirator with a graduated glass chamber or graduated piston. Then the same amount of normal salt solution (previously prepared) is drawn into another aspirator and injected immediately into the vein. The wound is closed by pressure for about five minutes. By that time the salt solution will have been thoroughly diffused, and whatever absorption of serous fluids may have occurred before it was injected will be counteracted by renewed secretion. The normal pressure in the blood-vessels will have been reestablished, so that no error can arise from this absorption or from abnormal diuresis or diaphoresis. Now, withdraw into an aspirator as much of the circulating blood and salt solution as was the amount of fluid injected. Meanwhile an assistant has filled a standardized water bottle with the blood first drawn, and determined its specific gravity before it could clot. Another water bottle of the same capacity is used to determine the specific gravity of the mixed blood and salt solution that has just been aspirated. The specific gravity of the salt solution alone is determined in the same way. It is well to have assured yourself before the operation that these bottles are accurately standardized, holding exactly the same volume of fluid, or, if they are not, what difference exists.

For the sake of illustration, assume that each bottle holds 200 c. c. of distilled water, and that we have obtained the following data:

Two hundred cubic centimetres of pure blood weigh 212 grammes.

Two hundred cubic centimetres of mixed blood and salt solution weigh 210 grammes.

Two hundred cubic centimetres of the salt solution employed weigh 201·2 grammes.

Then the specific gravity of the pure blood is..... 1·060

Then the specific gravity of the mixed blood and salt solution is..... 1·050

Then the specific gravity of the salt solution employed is..... 1·006.

We now have recourse to the following simple algebra:

Letting χ denote the number of cubic centimetres of blood in the animal's body after 200 c. c. were aspirated, we have

$\chi \times 1{\cdot}006 =$ absolute weight of blood in grammes left in the body after first aspiration (for volume multiplied by specific gravity gives weight of the substance).

$\chi + 200 =$ volume of salt solution and blood circulating in the body after injection.

$(\chi + 200)\, 1{\cdot}050 =$ absolute weight of blood and salt solution in the body after the injection.

201·2 grammes = absolute weight of salt solution injected.

$$\therefore \chi \times 1{\cdot}060 + 201{\cdot}2 = 1{\cdot}050\ (\chi + 200)$$
$$1{\cdot}060\,\chi + 201{\cdot}2 = 1{\cdot}050\,\chi + 210{\cdot}00$$
$$\cdot 010\,\chi = 8{\cdot}8$$
$$\chi = 880 \text{ c. c.}^*$$

To this add the 200 c. c. at first extracted, and we have 1,080 c. c. as the amount of blood in the animal's body. The weight of this blood (1,080 × 1·060) is 1,144·8 grammes.

The only objections adduced against this method that are worthy of mention are:

1. The blood is subject to slight oscillations in amount.
2. To slight oscillations in specific gravity.
3. The specific gravity of the blood is different in different parts of the body.

The first two objections are irrefutable, but it is evident that such oscillations must normally be slight. Just as the number of red blood-corpuscles in a cubic millimetre is constantly in flux, depending upon the amount and character of ingesta, etc., so the amount of blood in the body will vary, and such variations will generally be inversely proportionate to its specific gravity and to the number of red corpuscles in a cubic millimetre.

As with the red corpuscles, numerically, there is an average specific gravity and an average amount of blood which may be regarded as normal and which tends to persist. Just what this is can be learned only by a long series of experiments under all normal conditions.

That the specific gravity of the blood is different in different parts of the body has not yet been demonstrated, except under an important pathological condition—*i. e.*, hæmorrhage. But it is highly probable that some difference exists, though it is not pronounced enough to vitiate conclusions here reached.

The latest and best views upon the physiology of the spleen indicate that that organ is at once the destroyer and manufacturer of the red corpuscles; that the marrow of the bones exercises this function only after hæmorrhage; then the corpuscles are the same numerically in the splenic and general arteries as they are in the corresponding veins, and hence in the capillaries—*i. e.*, the blood is homogeneous when considered with reference to its red corpuscles. This rule, however, does not apply to the blood-supply of the glands or the intestines. The variations in the number of red corpuscles and the amount of water in the blood are the most important factors in the alterations in its specific gravity. The corpuscle formation of the marrow after hæmorrhage would cause an appreciable error in the results of these experiments were it not that (1) the time between the two aspirations is short, (2) the vessels are kept filled except for less than a minute, and (3) the aspirated blood is drawn from a vein at a point near an extremity. Hence, error arising from increased corpuscle production consequent upon the aspiration of pure blood is practically nil.

The vessels absorbing salts, etc., from the intestines are at the same time absorbing water, and any errors (at best infinitesimal) which might arise from the absorption of either of these substances alone thus cancel each other.

Drinking of fluid alone would, of course, increase the amount of blood and lower its specific gravity, thus causing one of those normal oscillations which are taken into consideration when a blood count is made or urine is examined. In short, the same factors which alter the amount and the specific gravity of the blood alter the number of its corpuscular elements to the cubic millimetre, and to assume that a normal proportion exists between the weight of an animal and the weight of its blood is as reasonable as to assume that there is a normal number of corpuscles to the cubic millimetre.

To insure absolute accuracy in these experiments the specific gravity of the fluids should be ascertained at a definite temperature, preferably that of the body. There is another method in which the operation is similar to the one here employed, but conclusions are reached by computation of the number of corpuscles to the cubic millimetre instead of specific gravity, but I have not used it because of the liability to error (at least one per cent.) in making the blood count.

At this date I am not prepared to publish the results

---

* After submitting the original manuscript of this article to Dr. James Carroll, he and I, working independently of each other, devised another simple algebraic method of dealing with the data ascertained by experiment. Let the problem be stated:

How many volumes of a fluid (*i. e.*, the blood) whose specific gravity is 1·060 must be added to one volume of a fluid whose specific gravity is 1·006 to produce a mixture whose specific gravity is 1·050?

Let χ = the number of volumes required.

Then $(\chi + 1)\, 1{\cdot}050$ = the weight of the mixed volumes of blood and salt solution.

$1{\cdot}060\,\chi + 1{\cdot}006$ = the weight of the mixed volumes of blood and salt solution.

$\therefore (\chi + 1)\, 1{\cdot}050 = 1{\cdot}060\,\chi + 1{\cdot}006.$

$1{\cdot}050\,\chi + 1{\cdot}050 = 1{\cdot}060\,\chi + 1{\cdot}006.$

$\cdot 01\,\chi = \cdot 044.$

$\chi = 4{\cdot}4$ volumes.

That is, 4·4 times as much blood must be circulating in the body after the first aspiration as was the amount of salt solution injected. If 200 c. c. salt solution were injected (*ut supra*) we see that 880 c. c. of blood were in the body at the time of the injection; the conclusions reached by the other procedure are verified.

of any investigations into this subject. As already indicated, a long series of experiments is necessary upon the same and different animals under many diverse conditions, as stage of digestion, etc. Evidently, if the sterile salt solution be used and instruments are aseptic, investigations may be made without danger upon the human subject, and we need not here depend upon analogy, as we do in so many physiological and some anatomical questions.

I have submitted this article for a criticism thereon to Dr. James Carroll, United States Army, assistant professor of pathology and bacteriology in the Columbian Medical College. His remarks, which I append, are worthy of earnest consideration because of their author's extensive acquaintanceship with physiological and bacteriological facts and questions:

"It seems to me that this method will be of extreme value to the scientific physiologist, in affording him the means of computing, with the closest possible approach to true scientific exactness, the precise amount of blood within the vessels of any animal.

"To the experimental therapeutist it will also prove of value should the practice of injecting drugs directly into the circulation ever become common. The latest tendency of thought, however, in that branch of medicine seems to be in the line of increasing the natural germicidal power of the blood plasma. Quinine is the only remedy I can recall that has been administered to any extent solely for its power as a parasiticide within the tissues of the body. Machiafava and Bignumi, in reporting their treatment of pernicious malaria by giving sixteen grains of quinine hypodermically every four hours, will say: It may be looked upon as a sort of fractional sterilization kept up until the strength of the disease is at last spent."

INJURIES OF PERIPHERAL NERVES.

*REPORT OF CASES.**

By L. L. WILLIAMS, M. D.,

PASSED ASSISTANT SURGEON, U. S. MARINE-HOSPITAL SERVICE, CHARLESTON, S. C.

Case I. *Traumatic Neuroma of Ulnar Nerve; Resection and Suture.*—William H., negro, aged forty-nine years, was admitted to the United States Marine Hospital, Memphis, Tenn., September 12, 1891. Two years previously he received an incised wound on the inner side of the elbow, was locked up by the police immediately afterward, and his wound received no attention. There was a scar between the inner condyle of the humerus and the olecranon, and just above the scar could be felt a small, movable, subcutaneous tumor into which the ulnar nerve could be traced above and below. This tumor was very sensitive on pressure, and there were occasional attacks of severe pain extending downward from the elbow to the hand.

There was a manifest tendency to the formation of the *main en griffe* of ulnar paralysis, flexion and extension of fingers were imperfectly performed, and passive extension was painful. The ability to separate the fingers and bring them together again was partially lost. There was marked atrophy of the interossei and the adductor pollicis; the little finger was abducted. There was anæsthesia of the skin of the little finger and the ulnar side of the ring finger, and hyperæsthesia of the inner surface of the hand.

On September 20th the tumor was exposed by incision and found to consist of a neuroma involving the ulnar nerve. The distal portion of the nerve was connected with the growth by a few fibres only. The tumor was excised, leaving a gap of five centimetres between the cut ends of the nerve. The latter were approximated by traction and united by four catgut sutures, the wound closed, and the limb put up in extension.

The wound healed promptly, but extension was maintained for two weeks. At the expiration of this time there was slight improvement of sensation but not of motion. Improvement of function was slow but progressive, and when the patient was discharged—December 12, 1891—there was no pain or tenderness along the course of the nerve, and sensation in the ulnar distribution was normal. Extension and flexion of fingers were much improved, and abduction and adduction of fingers were normal except in the little finger, which remained abducted. The function of the hand as a whole was excellent.

Case II. *Suture of Facial Nerve.*—William J., negro, aged twenty-seven years; admitted to hospital March 11, 1891. Two days previously he received an incised wound which laid open the cheek from the anterior border of the parotid gland to within an inch of the angle of the mouth. It did not penetrate the mouth, but had divided the parotid duct and three branches of the *pes anserinus*. The wound, which was in a septic condition, was cleansed as thoroughly as possible, a seton was carried into the mouth from a point opposite the wound of the duct, the divided ends of the cut nerves were freshened, and each severed branch was sutured with a single stitch of fine catgut. The wound was partially closed, leaving ample openings for drainage. Healing by granulation in two weeks. The seton was then removed and the external opening of the salivary fistula closed by cauterization. At the time of discharge—one month after operation—there was no improvement in the facial paralysis, and the patient has since been lost sight of. As improvement sometimes begins several months after operation, he may possibly have derived benefit from it since his discharge, but this is not likely, as the infection of the wound probably interfered with proper union of the nerves.

Case III. *Division of Musculo-spiral Nerve; Secondary Suture.*—J. M., white, aged twenty-eight years, admitted to hospital on October 20, 1892. On August 12, 1892, he received an incised wound of the outer side of the lower third of the right arm. The wound was dressed by a physician, and the arm put in an angular splint for several weeks. Upon removing the splint, the patient found that he had wrist-drop and numbness on the back of the hand. Upon examination, there were found complete paralysis of the extensors of the wrist, reaction of degeneration in the paralyzed muscles, complete anæsthesia of the back of the thumb, and partial anæsthesia of the back of the hand. There was a linear cicatrix in the lower third of the arm, and about an inch to its outer side could be felt the enlarged upper end of the severed musculo-spiral nerve.

October 22d.—Etherized patient and cut down upon the divided nerve. The upper end was easily exposed, but the lower end could not be found. The incision was extended downward, and the nerve exposed in its normal situation in the interspace between the brachialis anticus and supinator longus muscles. The lower end was then found by following

* Read before the South Carolina Medical Society, December 2, 1895.

the nerve up to the cicatrix. The ends were freshened and sutured with fine chromicized catgut, the wound closed, and the limb put in an angular splint.

November 5th.—Removed splint and dressings; primary healing in wound. Patient was discharged two days later, and was subsequently treated as an out-patient. There was gradual but progressive improvement. On January 1st there was considerable improvement of the anæsthesia and a slight but distinct return of motion. Patient was last seen on February 1, 1892. There was a more decided return of motion in the extensor muscles, and the anæsthesia had nearly disappeared. I have been unable to obtain the subsequent history of the case.

Case IV. *Injury of Brachial Plexus.*—W. W., mulatto, aged twenty-one years, admitted to the hospital on February 15, 1892. Three weeks previously he had been stabbed near the outer end of the collar bone. Immediately afterward he noticed numbness of the back of the hand and forearm, and a week later he lost power in the arm and hand. When examined he was unable to raise the arm or flex and extend the forearm; finger movements were very weak and pronation and supination nearly lost. Loss of forearm movements was partly due, however, to a chronic synovitis of the elbow joint. There was anæsthesia of the dorsum of the hand and forearm, with pain in the anæsthetic area. A small sinus was found, opening just above the outer end of the clavicle. A probe entered for half an inch and encountered exposed bone.

February 17th.—Etherized patient and laid open sinus. Found that it led to a circular opening in the flat, outer end of the clavicle, about half an inch from its articular surface. Through this opening a small, depressed sequestrum was discovered and extracted. The knife had evidently perforated the clavicle and carried a piece of the bone before it. Four days after the operation the anæsthesia had disappeared, and a month later all symptoms of paralysis had passed away. The elbow joint was subsequently successfully excised for tuberculous disease.

Case V. *Traumatic Neuritis of Ulnar Nerve; Nerve Stretching.*—Miss G. M. M., aged nineteen years, music teacher, consulted me during November, 1891. Four years previously, in a cable-car accident, she sustained a severe contusion of the left arm, the limb having been extensively ecchymosed along its inner aspect. Dating from this accident there had been constant pain and tenderness at the inner side of the arm from the axilla to the elbow. After a time the pain extended to the supraclavicular space and the back of the neck. The pain gradually increased in severity and the hand became weak. Patient was finally unable to separate the fingers and had to abandon the piano. The following points were noted at the examination: Patient excitable and nervous, but in good general health; carries the arm in a sling with the forearm flexed and the arm abducted from the side; any attempt to bring the elbow to the side or to extend the forearm causes acute pain along inner side of arm; the fingers are semi-flexed, and attempts to straighten them passively cause great pain; abduction and adduction of fingers are abolished; there is exquisite tenderness along the ulnar nerve, from elbow to axilla, and partial anæsthesia and paræsthesia in its cutaneous distribution; there is a less degree of tenderness above the clavicle and slight tenderness over the cervical vertebræ. She had submitted to prolonged courses of medical and electrical treatment in Kansas City and Pittsburgh. Galvanism had given temporary relief only, and morphine was frequently required to allay pain.

Nerve stretching was advised, but the patient and her family were informed of the uncertainty of cure. Several months later, in February, 1892, she returned and submitted to the operation. The ulnar nerve was exposed at a point four inches above the elbow and thoroughly stretched. The wound was closed without drainage and united under one dressing. The limb was fixed on a splint in extension before recovery from the ether. For some days after the operation there was moderate pain referred to the wound and the back of the neck. Passive motion of the fingers caused no discomfort. She was sent home one month after the operation with instructions to continue the use of galvanism. At that time the attacks of pain were slight and infrequent, the fingers could be voluntarily extended, and the arm carried at the side in extension. Sensation was normal, but the small muscles of the hand were still paretic. A month later she wrote saying that the arm was well and that she had returned to her music. Her family physician, Dr. E. E. Ellis, of Dyersburg, Tenn., informed me shortly afterward that the arm had been free from pain for many weeks, the paretic finger muscles had recovered their function, and that recovery was apparently absolute.

KEPHIR.*

By C. D. SPIVAK, M. D.

The important rôle which milk plays in the human economy in health and in disease in all periods of life is universally known. Every physician, however, is aware of the fact that this ideal food, as it is called, is in its natural state, in the majority of cases, not fit for use, and in certain other cases positively harmful. From time immemorial man has made strenuous efforts to improve the natural product by subjecting it to various modifications. Boiling must have been the most primitive mode of improvement. Dilution with various fluids, sterilization, peptonization, pancreatization, etc., are improvements well known to every modern physician. By subjecting milk, under certain conditions, to the influence of temperature, light, and air, various food stuffs can be produced. The different fungi and schizomycetes which float in the air find in milk a rich soil for the development of their kind. It is but a few decades since we became aware of the existence of butyric acid and mucous fermentation in milk. But the primitive peoples were excellent macroscopists; they observed and experimented. They have learned to make different kinds of cheese; the Don Cossacks have their *aryan* (an acid fermented milk); the Swedes make *tilmjolk* (a mucous fermented milk). The savages knew also the secret of producing an alcoholic fermentation in milk. The Tartar nomads, the dwellers of the steppes, who possess large herds of horses, knew how to produce an alcoholic beverage from mare's milk, which they call kumyss; while the Tartar mountaineers who inhabit the northern slopes of the Caucasian Mountains, and who own extensive cattle ranches, could manufacture a similar beverage from cow's milk, called kephir. Both products have been known to the Tartars for centuries, but the civilized world learned of kumyss about a century ago, and with kephir we have been acquainted

* Read before the Philadelphia County Medical Society, June 26, 1895.

only for the last two decades. It is to the latter product that I wish to call the attention of the medical profession. The facts that kephir is used extensively as a dietetic and therapeutic agent in Russia, Germany, Switzerland, Italy, and Holland; and that numerous experiments have been made and investigations on a large scale conducted by such eminent clinicians as Dujardin-Beaumetz, Jules Simon, and Hayem (Paris), Eichhorst (Zurich), Weyse and Monti (Vienna), Lépine (Lyons), Nanu (Roumania), Mandowski (Badenweiler), and Sorokin and Podwysotski (Russia), justify me in presenting before you this subject.

The ferment which is used to induce an alcoholic fermentation in milk is entirely different from all the other known ferments. In order to make beer, wine, vinegar, bread, etc., the ferments are easily obtained; they are, so to speak, omnipresent. In order, however, to produce an alcoholic fermentation in cow's milk it is necessary to have a special ferment.

This special ferment is known among the Tartars under various names—seeds, grains, the millet of the prophet, etc. In its fresh living state the ferment is composed of white bodies, usually of irregularly roundish form, equal to or exceeding a walnut in size. They have their surfaces crisped with blunt projections and furrowed like a cauliflower. They are of a firm, toughly gelatinous consistence, becoming cartilaginous, brittle, and of yellow color when in a dry state. When placed in milk the kephir grains begin to grow and increase in size The larger ones split into smaller, each of which in turn undergoes the same process of growth and reproduction. They grow so rapidly that in the course of three to four weeks they double in quantity.

The origin of the kephir grains is shrouded in mystery. The current legends among those peoples describe them as of divine origin, a blessing sent down from Allah through his prophet Mohammed. Among the many wild superstitions which cluster around the kephir grain there is the belief that whosoever sells or gives away gratis his grains causes thereby his remaining grains to lose their fermentative power. They were even forbidden to be given away as a dowry. The newly married had to steal the grains when making the first visit to their parents, a theft of which all concerned were aware. This injunction was so religiously kept that until the sixties there was not one European who knew anything about the existence of the grain.

In 1866 Djogin read a short paper on kephir before the Caucasian Medical Society.* In the following year Sipowitch presented some more data about the grains before the same society.† Ten years later Shablowski‡ presented a few additional facts about the fermented product. In 1881 Kern made for the first time a thorough biological investigation of the grains.# In 1882 B. N. Dmitrieff,‖ a practising physician in Yalta, Crimea, published his observations upon kephir and elaborated the process of preparation as it is used at present. To the latter the medical profession is indebted for the application of kephir as a dietetic and therapeutic agent. The morphology of the kephir grains was further elaborated by Kern,* Sorokin,† and Schtange.‡

The kephir grain is a composite body made up of three different organisms:

1. *Saccharomyces cerevisiæ* (Meyen), or yeast fungus;
2. *Bacillus acidi lactici* (Pasteur); and
3. *Dispora caucasica*, Kern; or *Bacillus kephir* (Sorokin), a rod-shaped bacterium. The rods are united together into filaments which are closely interwoven in countless zigzags, and they are firmly connected by their tough gelatinous membrane. Notwithstanding the fact that the above named bacteria follow the laws of their kind, yet all three take an active and equal share in the process of producing the kephir fermentation. The happy cohabitation and co-operation of this family of different elements, or, as the biologist would say, commensalism, is considered a unique phenomenon in biology.

The chemical analysis of the grain was made by Struve.# It is composed of:

Water	11·21
Fat	3·99
Peptone dissolved in water	10·98
Albuminoids dissolved in ammonia	10·32
Albuminoids dissolved in caustic soda	30·39
Residue	33·11
	100·00

Having briefly summarized the facts concerning the kephir grains so far as is known at present, I will say a few words about the chemical and physical changes produced in milk under the kephir fermentation.

When the grains are steeped in milk at a temperature of 10° to 12° R. they fall to the bottom of the vessel, and in about one to two hours bubbles form around them, and they rise to the surface of the milk. The neutral or alkaline reaction of the milk gives way to an acid reaction. Simultaneously with the appearance of the bubbles there are formed in the folds of the grains fine curds. These changes indicate the beginning of the process of fermentation. A part of the sugar of milk having turned, through the action of the *Bacillus acidi lactici*, into lactic acid, thus forming an acid medium, another part of the sugar of milk is split by the action of the *Saccharomyces cerevisiæ* into CO_2 and alcohol. A thick foam is formed in the upper layer of the vessel which is composed of bubbles filled with carbonic-acid gas, which, having attained a certain size, burst; of fine curds of casein, which grow in size and fall to the bottom; and of the grains, which have by this time all risen to the surface, and which in consequence of the

* *Protok. Caucas. Med. Soc.*, 1866.

† *Ibid.*, July, 1867.

‡ *Milit. Med. Journal*, January, 1877.

Ueber ein neues Milchferment, *Bulletin de la Société natur. de Moscow*, 1881, No. 3; and Ueber ein Milchferment des Kaukases, *Botanische Zeitung*, 1882, No. 16.

‖ Kapir. *Klinicheskaya Gazeta*, 1882, No. 16.

* *Loc. cit.*

† Dnevnik, Ob. Kasansk., *Vratch*, 1883; Rastiteln, *Parasiti*, 1882; Developmont of Granule of Kefir, *Vratch*, 1885, vi, p. 245.

‡ Von Ziemssen's *Handbuch d. allg. Therapie*, 1886.

Vratch, 1884; and Ueber Kephir, *Protoc. d. deutsche chemisch. Gesellschaft*, 1884.

constant movement of the bubbles seem to turn themselves from side to side. Between the lower layer, opaque and of white color, and the upper layer of foamy consistence the milk becomes thinner, of a blue color, and transparent. The vessel is then shaken up; the grains fall to the bottom; the curds are broken up into finer particles and are held in suspension in the fluid, which becomes thicker and thicker. After seven to eight hours the ferment reaches its maximum of activity; the foam does not form so readily even after shaking the vessels, the bubbles are smaller, the grains show lessened motility, and the casein becomes finer and finer, melting away as it were.

Now, a few words about the *modus operandi*.

The Tartars prepare the kephir in the following manner: A leathern bag (*burdjuck*) is filled with fresh cow's or goat's milk, the kephir grains are thrown in, and the bag is tightly tied up. In summer the bag is placed in the shade, and in winter where the sun can reach it. From time to time the bag is shaken. The children take the office upon themselves, and usually use the bag as a ball. It is also considered a duty that every passer-by should kick the bag and set it rolling. In a few hours, or at the utmost in two days, according to the season, the kephir is ready for use. The bag is emptied and refilled, using the same grains over and over again.

The method of preparation now used in civilized countries is that elaborated by Dr. Dmitrieff. The grains are placed in an earthen or darkened glass vessel and are covered with milk, the bulk being three times that of the grains. The mouth of the vessel is covered with gauze or hygroscopic cotton with a view to exclude the ingress of dust only, and not to make it air-tight. The vessel is placed in a cool place at 12° R., and as soon as the fermentation sets in—i. e., as soon as the grains rise to the surface of the milk—the vessel is to be shaken up every two or three hours, with a view to thoroughly mixing up the fluid and liberating the grains from the curds and the bubbles. After twenty-four hours the grains are separated from the fluid by means of a sieve, are placed in a clean vessel, and a new quantity of milk is poured on them. Unlike the Tartar's, this product is not used as a beverage, but as a "fermenter," or, as it is called in Russia, "*zakvaska*." The zakvaska is diluted with double the quantity of milk and poured into bottles, which are corked hermetically. The bottles must not be completely filled, as they may burst. They are kept at the same temperature as the zakvaska, but they do not require the exclusion of light. The shaking is to continue at regular intervals, but not in homœopathic fashion, as it may churn the milk. In twenty-four hours the kephir is ready for use, and it is called the first day's kephir, or weak kephir. It has the following characteristics: the consistence of thin sour cream, a white color, a pleasant sour-sweetish taste, slightly acrid. When the bottle is opened it effervesces. The walls of the bottle and the glass which have held kephir are covered with fine curds.

When the bottle is left under the same conditions for another twenty-four hours the kephir is called second day's or medium kephir; in forty-eight hours, third day's or strong kephir. The weak, medium, and strong kephir refer to the quantity of alcohol and carbonic-acid gas contained in it.

A chemical analysis of the bottled kephir was made by Sadoven,* Seidman,† Weber,‡ Weinberg,# Sonnerat,‖ Malerba,△ Menozzi,◊ Tushinski and Silvanoff, Nenski and Rakovski, Gartier.‡ I give, however, only the table of analysis of Dr. I. Biel,↕ because of its thoroughness:

	First day.	Second day.	Third day.
In 100 parts of kephir:			
Lactic acid	0·54	0·56	9·65
Sugar of milk	3·75	3·22	3·09
Casein	3·34	2·87	2·99
Albumin	0·11	0·03	0·00
Acid albumin	0·09	0·10	0·25
Hemialbumose	0·09	0·28	0·40
Peptone	0·03	0·04	0·08
In 100 parts of albuminoids:			
Casein	58·47	86·07	80·20
Albumin	3·05	0·90	0·00
Acid albumin	2·52	3·22	6·69
Hemialbumose	5·03	8·43	10·93
Peptone	0·93	1·38	2·18

Compare the foregoing analysis of kephir with the following table of analysis of milk:

Composition of Milk.‡‡

	Proteids.	Casein.	Albumin.	Hemialbumose.
In one hundred parts of milk:				
Human	1·38	0·65	0·33	0·32
Cow's	3·63	3·16	0·29	0·16

*Composition of Milk in One Hundred Parts.***

	Sp. gr.	PROTEIDS. Casein.	Albumin.	Fat.	Lactose.	Salts.	Water.
Human	10·27	1·03	1·26	3·78	6·21	0·31	87·41
		2·29					
Cow's	10·32	3·02	0·53	4·78	4·46	0·76	85·7
		3·55					

We arrive at the following conclusion in reference to the changes produced in kephirization:

1. Fat, salts, and water remain unchanged.

2. The quantity of lactose is gradually lessened from 30–50 per mille to 16–30 per mille in the second-day kephir, and to 12–20 per mille in the third-day kephir.

* *Vratch*, 1883. † Odessa, 1884.

‡ Quoted by Sadoven, *loc. cit.*

Heilpern. Kefir. *Viadomosci Farmaceutyczny*, 1886.

‖ Kosta-Dinitch. Le Kephir ou champagne laité du Caucase. *Thèse de Paris*, 1888.

△ Getzel. *Kefir o vero koumiss de latte di vacca.* Napoli, 1888. Dedicato al Dottor W. Dmitrieff.

◊ Terzaghi. Kefir in medicina. *Bollettino della Poliambulanza di Milano*, Marzo, Aprile, 1891.

‡ Dmitrieff, *loc. cit.*, 1894.

↕ *St. Petersb. med. Wochen.*, 1885; *Pharmac. Ztg.*, 1886. The Albuminoids of Kephir and Koumiss, *Farmazeut. Jurnal*, 1886.

‡‡ Schmidt. *Materials for the Elucidation of the Properties of Human and Cow's Milk*, Moscow, 1882.

** Sydney Martin. Article on Food, in *Treatise on Hygiene*, by Stephenson and Murphy, vol. i, p. 427.

3. Lactic acid is increased from 3·5–8·6 per mille in second-day kephir to 6·3–9·0 in third-day kephir.

4. Alcohol is produced from 5·3–8·0 per mille in second day kephir to 6·0–10·0 in third-day kephir.

5. Carbon dioxide is generated in quantities approximately 10 per cent.

6. A part of the casein—namely, about ten per cent.—is transformed into acid albumin and peptone; ten per cent. into hemialbumose; and the rest loses its lime, and therefore becomes more digestible.

I shall not attempt to summarize all the theories concerning the part which each of the bacteria plays in producing kephir. Suffice it to say that from a practical point of view we attach the greatest importance to the fact that the casein of cow's milk, being digested by the human stomach with comparative difficulty on account of its forming large, hard, and tough curds, changes under the action of kephir into peptone and hemialbumose, and, having lost its lime it forms, as in the human milk, small, soft curds.

Therapeutic Action of Kephir.—The main bulk of kephir is composed of *water*. The introduction of larger quantities of water in a form tolerable by the stomach must influence greatly all the vital processes. Diluting the food, it promotes absorption, nutrition, and elimination.

The carbon dioxide acts soothingly upon the sensitive nervous apparatus of the alimentary canal by causing temporary hyperæmia of the mucous membrane; it increases the capacity of absorption, raises the muscular tone of the stomach and intestine, and entering the blood it lowers the temperature.

The first effect produced by *alcohol* is the excitation of the nerves with which it comes in contact, and hence kephir produces a greater secretion of saliva, gastric and intestinal juice, and hastens the digestive process.

Lactose, by exciting the mucous membrane of the digestive apparatus, raises its activity. It increases peristalsis more than any other form of sugar.

Lactic acid is a normal constituent of the stomach juice and plays an important rôle in the elaboration of the albuminoids. It makes the urine less acid.

The *albuminoids* (albumin, casein, and other products) become through kephirization of a more absorbable form and are taken up by the blood without any extra labor of the stomach.

The *fat* remains unchanged by the kephir ferment. Its nutritive features rest mainly upon the amount of heat produced by their oxidation.

This short *résumé* of the action of the different ingredients of kephir gives us some idea of what we may expect from its use.

The taste of kephir is a very pleasant, refreshing, sour-sweetish, mucous and biting taste, reminding one of the taste of thin, sweet cream on the one hand, and of milk with Seltzer on the other. It is, as a rule, taken with more pleasure than milk. It quenches thirst more readily than milk, and in summer can be used instead of Seltzer.

The feeling of heaviness and pressure in the stomach is not felt after the use of kephir even by those who usually feel it after milk. After partaking of kephir the appetite is whetted. The first-day kephir acts somewhat as a laxative, but those of the second and third days are constipating, which goes to show that the assimilation is complete, leaving no residue.

The heart remains uninfluenced, even under large doses.

The action of kephir on the pulmonary apparatus is very marked in those suffering from pulmonary trouble. The cough becomes easier and expectoration is freer.

The diuretic action of kephir is even more marked. According to Dr. Georgiefsky,* after taking three pints of kephir in the twenty four hours the quantity of urine is increased from one hundred cubic centimetres to three thousand cubic centimetres, the specific gravity becoming lower. The solids are increased, especially urea.

According to Olshanetzky,† the reaction becomes less acid, the chlorides and urea increase, and uric acid is diminished.

Dr. Alekseyeff‡ has made experiments upon healthy persons in the Medico-chirurgical Academy of St. Petersburg, and I will quote the results:

1. The relative quantity of fæces is diminished.

2. The quantity of urine is increased and the specific gravity is lowered.

3. The amount of nitrogen in the urine is increased.

4. The retention of nitrogen in the body is greater, notwithstanding its increased elimination through the urine.

5. The assimilation of nitrogenous substances is raised.

The bodily weight is increased, according to Wyss.#

Now I will enumerate the diseases in which kephir has proved of benefit.

In pulmonary tuberculosis, and generally in diseases of the respiratory tract—chronic bronchitis, pleuritis, etc.—which are accompanied by lowered vitality, cod-liver oil, milk, and meat preparations of course improve the nutrition of the patient, but they require the stomach to be in good condition. Kephir may be given in such cases where the foods mentioned are not tolerated. Lipski‖ has stopped a stubborn diarrhœa in a consumptive by administering kephir.

In gastro-intestinal catarrh, especially those forms which are characterized by weak, sluggish digestion, poor appetite, atony, etc. According to Professor Dujardin-Beaumetz,△ kephir is invaluable in the catarrh of alcoholics.

Huguenin ◊ (Zurich) used kephir exclusively in dilatation of the stomach, with great success.

Dmitrieff (Russia), Hayem‡ (Paris), Huguenin, and Lipski↕ had very good results in cancer of the stomach.

* *Vratch*, 1884.

† Untersuchungen über d. Stoffwechsel wehrend d. Kefirkur. *Deutsch. med. Wochen.*, 1890, Leipsic, xvi, p. 589.

‡ Materials for the Study of the Assimilation of Nitrogenous Substances while taking Kephir. *Dissertation*, 1888.

Theodoroff. *Studien über Kephir.*

‖ Assimilation of Kephir. *Vratch*, 1888, vol. ix, p. 643.

△ Kosta-Dinitch. *Le Kephir ou champagne laité.* Paris, 1888.

◊ Theodoroff. *Loc. cit.*

‡ *Leçons de thérapeutique*, Paris, 1893.

↕ *Loc. cit.*

The patient could bear nothing on the stomach, and after a few days of the use of kephir not only did the vomiting cease, but the patient could with the aid of kephir digest small pieces of meat.

In *ulcus rotundum* Lépine (Lyons), Hayem (Paris), Eichhorst (Zurich), and Weiss (Vienna) have used it with great satisfaction.

Dinitch,* Saillet,† Dujardin-Beaumetz, and Hayem have successfully treated chronic and subacute gastritis with it.

Hirsh‡ has used it with success in whooping-cough in children.

In anæmia and chlorosis kephir has been of great benefit in the hands of all the clinicians mentioned, and Soboleff,# Georgiefsky,‖ and Koslowsky△ have each reported favorable cases.

Of chronic diseases of the urinary apparatus several cases have been reported by Lawdowsky and Wigh.◊

In diseases of the digestive organs in children, especially in summer time, kephir has proved to be of great benefit in the hands of Monti‡ and a host of other practitioners. There is only one man in this New World who, to my knowledge, has had the courage to experiment with kephir. It is Dr. H. Longstreet Taylor,‡ and his two articles are the only original writings about kephir in the English language.

I will quote a few lines: "During my four months' term of service at the Home for the Friendless and Foundlings (Cincinnati, Ohio), just ended, I have not had a single death from marasmus. . . . I attribute this immunity from fatal cases of malnutrition to the liberal use of kephir during that time." Dr. Taylor has not lost his interest in and enthusiasm for kephir as yet, as shown in his private letter to me dated St. Paul, March 8, 1895.

The kephir is to be given as long as the patient has no aversion to it. There comes a time when the system, so to speak, is saturated with the kephir, and the patient can not take it any more, and then the physician must stop it. It is contraindicated in general plethora and corpulence. The presence of lactic acid makes it unfit for use in rheumatism and rhachitis.

To summarize: Kephir is indicated whenever it is necessary to raise the nutrition of the enfeebled organism. The curative effect of kephir, in a limited sense, has been noticed only in certain cases of gastro-intestinal affections.

The process of preparing kephir, as can be seen from the description, is very simple. The tyro will find, however, that he will have to repeat the experiment several times before he will be enabled to produce a kephir of good quality. The making of bread is a very simple procedure, and yet it requires long practice before one can make good, wholesome bread.

The principal condition for the production of good kephir is cleanliness, not alone of the grains and the milk, but also of everything that comes in contact with the article, and hence surgical cleanliness of the hands and dress of the person who attends to it, and scrupulous cleanliness of the vessels in which the kephir is prepared, the room, counter, etc.; and, last but not least, good active kephir grains.

Let me hope that my attempt in presenting to the English-reading medical fraternity for the first time a somewhat detailed account of kephir, incomplete as it is, will serve as an incentive to others to take up the study and investigation of kephir.

* *Loc. cit.* † *Lait fermenté*, Paris, 1886.

‡ *Medicinskaye Obozre*, 1889.

Kephir, 1883. ‖ *Vratch*, 1884. △ *Vratch*, 1884.

◊ Theodoroff. *Loc. cit.*

‡ Ueber Kephir und seine Anwending in der Kinderpraxis. *Allgemeine Wiener med. Ztg.*, 1887, xxxii, 265.

‡ Kephir and its Use as an Infant Food, *Archives of Pœdiatrics*, 1888, v, 286; and Kephir as a Food for Infants, with Report of Cases, *Cincinnati Lancet*, 1888, p. 63.

Bibliography.

[Besides the books and articles referred to or quoted from above.]

Pyasetski. Kefir. *Trudi Ob. Russk. Vratch*, 1882.

Bogomoloff. *Mezdunarod. Klinika*, 1882, No. 4.

Schastni. *Voyeno Sanitarn Dyelo*, 1882.

Ogranowich. *Vratch*, 1882, No. 15.

Kareyev. *Vratch*, 1882.

Goroleitchenko. Rôle of Kephir in Therapy. *Protoc. Ob. Magilevsk. Vrat.*, 1883, No. 4.

Podvisotsky. *Kephir*, fourth edition, 1884, and *Kefyr, Kaukas. Gährungs-ferment und Getrank aus Kuhmilch*, Giessen, 1884.

Chernova Popoya. *Trudi Ob. Russk. Vratch*, 1883–'84.

Sklotovski. *Vratch*, 1883, No. 45.

Koslowski. *Protoc. Mosk. Chir. Obs.*, 1883.

Hoffman. *Protocolle d. Wiesbadener Congress*, 1883.

Krannhalls, H. Ueber das Kumyss aehnliche getrank Kephir und über das Kephir Pilze. *Deutsch. Archiv f. klin. Medicin*, Leipsic, 1884, xxxv, p. 18.

Marpman. *Die Spaltpilze.* Halle, 1884; and *Pharmaceut. Centrl.*, Lalle, 1888.

Stern. *Deutsch. med. Wochenschrift*, 1884.

Zborowski. Le kephir. *Montpellier médical*, 1884.

Maximoa. Preparation et application de Kefir. *Semaine médical*, Par. 23, iv, p. 18, 1884.

Mandrowski. *Deutsch. med. Woch.*, 1884.

Ivanowitch. Du Kephir. *Union médicale*, 1884.

Förster. Kefir. *Allgem. med. Centr.*, 1884, Bren viii, 1281.

Gibson. *Pharmac. Journal and Transactions*, 1884.

Ponomarew. *Deutsch. med. Ztg.*, 1884.

Brajnin. *Zeitsch. f. klin. Med.*, 1884.

Kuhne. *Centralblatt f. klin. Med.*, 1884.

Dashewski. *Russkaya Medicina*, 1884.

Cohn. *Protocol. der Schles. Gesell. f. Vaterland Cultur*, 1884.

Kobert. Schmidt's *Jahrbücher*, 1885.

Gebhard, Fritz. *Ueber Kefir.* Dissert. Würzburg, 1885.

Wyszinski. *Kefir*, third edition. Warsaw, 1885.

Neuss. Ueber Kefir. *Pharmaceut. Ztg.*, 1885.

Wolferz. *St. Petersb. med. Woch.*, 1885.

Bourquelat. Les microbes du kefir. *Revue scientifique*, 1886.

Weiss. Ueber Kefir. *Wiener med. Wochenschrift*, 1886.

Budeck. *Deutsch. med. Ztg.*, 1886.

Levy. Die wahre Natur d. Kefir. *Deutsch. med. Ztg.*, Brln 86, vii, p. 783, 1886.

Lepine (de Lyon). Sur le kephir. *Semaine méd.*, 1887.

Karl. Le kefyr. *L'hygiène pratique*, 1887.
Bogoluboff. *Kefir.* Moskau, 1888.
Dedichen. *Nork. Mag. f. Lageridensk*, 1886.
Budeck. *Pharmaceut. Ztg.*, 1888.
Hirsch, D. *Medicinskage Obozrenge*, 1889.
Mishelew. *Materials in Reference to the Assimilability of the Fat of Kefir by Tuberculous Patients.*
Sigalina, K. A. *The Use of Kephir in the Epidemics of Cholera.* Warsaw, 1893.
Rachmalewich, M. *Kephir*, a popular practical brochure. Pyatigorsk, 1893.
Struve. On Kefir. *Amer. Journ. Pharmacy*, Phila., 1884, 4 s., xiv, 195.
Shurman, Stekhoven. Saccharomyces Kefir. *Onederzok Ged. in h. physiol. Laborat. d'Utrecht*, Haag, 1891, 4 r. 1119.
Lemon. *Domestic Kephir.* St. Petersburg, 1891.
Beyerwick. Sur le kefir. *Kefyr Handel. v. h. Nederl. Nat. en Geneesk. Cong.*, Leiden, 1889, ii, p. 106; also *Archive Neerl. d. Scien. Exact.*, Harlem, 1889, xxiii, p. 428.
Echervogt. *Kefir, seine Darstellung aus Kuhmilch*, Berlin, 1890.
Plate. *Kefyr in neuesten Zeit. . . .* besten Mittel gegen . . . Blutarmuth, Magen-catarrhen und Bleisucht, seine rationelle und billige Darstellung und Anwendung. Bremen, 1888.
Weiss. Ueber Kefir. *Mittheil d. Wien. med. Coll.*, 1886, xii, p. 177.
Rudeck and Adam. Einführung d. Kefyrkuren in Schlesischer Bäderan. *Gesundheit.* Frankfurt am Main, 1886, xi, p. 337.
Buchwald. Ueber Kefir. *Jahresberichte d. Schless. Ges. f. Vaterl. Cultur*, Bresl., 1885, lxii, p. 157.
Hammersten. Undersöking of Kefir. *Upsala Läker of Förh*, 1886, xxi, 242.
Stern. Ueber Kefyr. *Deutsch. med. Wochenschrift*, Berlin, 1885, xi, 172.
Buchwald. Ueber Kefir. *Breslauer ärtztliche Zeitschrift*, 1885, vii, 55, 68.
Hogner. On Kefir. *Eira*, Götteburg, 1885, ix, 275.
Brainin. Ueber Kefir, ein neuer Heilgetrank. *Zeitschrift d. Therapie*, Wien, 1884, ii, 41.
Mandrowsky. Ueber Kefir, Mousirende Milch Wein. *Deutsch. med. Wochenschr.*, Berlin, 1884, x, 324.
Muczinski, A. Kefir. *Czasopismo*, Levan, 1884, xiii, 218.
Zborowsky. Le kefir ou koumiss du lait de vache. *Montpellier méd.*, 1884, 2 s., ii, 571.
Kühne. Ueber Kefir. *Verhand. d. Congress f. innere Med.*, Wiesbaden, 1884, iii, 347.
Ucke, J. Der Kefir. *Deutsch. Vierteljahrschrift f. officielle Gesundheitspflege*, Bremsch, 1884, xvi, 432.
Buckowsky, W. (son). Jesze raz da Kefire. *Czasopismo*, Lwow, 1884, 13, 299.
Chernov. Popova. o. Kefire. *Trud. Ob. Russkich Vratch*, St. Petersb., 1884, i, No. 1, p. 62.
Zuber. Note sur le kefir. *Gaz. hebd. de méd.*, 1884, 2 s., xxi, p. 687.
Wytzynsky. *Gaz. Lekarsk.*, Warszow, 1883, 2 s., iii, 607.
Albrecht. Sur le kefir. *Bull. d. Sci. Nat.*, 1883–'84, xiv, 113.
Wyss, O. *Blätter f. Gesundheitspflege*, 1885, No. 10.
Kogelman. *Deutsch. med. Ztg.*, 1886, No. 5.
Shorer. *Deutsch. med. Zeit.*, 1886, No. 73.
Dmitrieff, B. N. *Kephir, a Therapeutic Beverage from Cow's Milk*, St. Petersburg, 1894.

529 Pine Street.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co. Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, JANUARY 18, 1896.

THE SERUM TREATMENT OF LEPROSY.

We are indebted to Dr. Pablo Garcia Medina, of Bogotá, the permanent secretary of the National Academy of Medicine of the Republic of Colombia, for a copy of an important communication presented before that learned body on the 22d of last November by Dr. Juan de Dios Carrasquilla L. This communication is supplementary to one presented by the same gentleman before the academy on August 30th. Dr. Medina informs us that at the November meeting the academy declared officially that Dr. Carrasquilla was the introducer of the serum treatment into Colombia and the first to prepare and employ an antileprous serum. It seems that at the time of the August meeting Dr. Carrasquilla had had occasion to deal only with that variety of lepra Græcorum which is characterized by nervous manifestations. His second communication relates to tubercular leprosy.

Dr. Carrasquilla gives a full account of a case of well-marked tubercular leprosy characterized by leontiasis (the *leprôme en nappe* of Leloir) and the anæsthetic phenomena commonly seen in the disease. Prompt improvement followed the use of the serum treatment, and recovery, save for the persistent marks of the ulcerative features of the disease, ensued in less than a month. Shorter accounts are given of three other cases of tubercular leprosy in which the results of serum treatment were equally satisfactory, and then the author states his conclusions as follows: 1. The serum treatment overcomes the anæsthesia more or less rapidly, in proportion to the extent and gravity of the lesions of the peripheral nerves. 2. It decolorizes the macules without obliterating them entirely; they become the seat of abundant desquamation. 3. It causes œdema to disappear rapidly in some cases, slowly in others; the skin retracts, becomes wrinkled, and finally returns to its normal state when the œdema has subsided. 4. The tubercles become flattened and softened and disappear, either by absorption, by desquamation, or by suppuration, leaving marks to show their situation. 5. After suppurating abundantly, the ulcers heal with marvelous rapidity and leave the skin sound. 6. The scars of old suppurative lepromata become pale and tend to assume a level with the surrounding skin. 7. The ulcerated mucous membranes hasten to cicatrize, become decolorized like the cutaneous macules, and regain their sensibility, while the tubercles disappear. 8. With the disappearance of the œdema and the tubercles and with the fading of the stains the countenance grows thin and loses its leonine aspect entirely. 9. The appetite is recovered,

together with the capability of sleeping, there is cheerfulness, content replacing the previous profound depression, and lost hope is regained. 10. From the first serum injection administered to the patient the morbific action of the *Bacillus lepræ* ceases, and no new manifestation of the disease shows itself. This the author has invariably witnessed in the fifteen cases that he has treated. The peripheral nerves are the seat of the disease, he says, and the lesions observed depend on disturbed nervous action; that corrected, they will gradually disappear.

Dr. Carrasquilla closed his communication with the statement that at the next meeting of the academy he would explain his methods of preparing and using the antileprous serum, as well as of avoiding accidents in its employment. We shall look for that final communication with great interest.

MINOR PARAGRAPHS.

AN OUTRAGE ON A PHYSICIAN.

The ordinary risks to which a physician is exposed are well enough known; infection, over-exertion, and the accidents of travel make it almost impossible for him to finish an active career without having experienced some of the physical shocks that are pretty sure to accompany it. Unfortunately, life and limb are not the only things imperiled; injury to reputation from careless criticism or, still worse, from intentional defamation is all too common. When the accusation is made by a woman, however unprincipled or ill-balanced she may be shown to be, the case is most serious, but it is one in which any medical man may find himself. During the past week an instance of the kind has occurred in the neighborhood of New York and been given wide publicity in the newspapers of the city. A well-known gentleman of the highest social standing, of unimpeachable integrity throughout the whole of a long, honorable, and most useful career, held in the greatest affection and esteem by the community, suddenly finds himself confronted with the following situation: A woman of obscure family whom he has attended professionally accuses him to her husband of having insulted her. The husband calls another man to his assistance, arms himself, and then telephones to the doctor that he is wanted at once. The doctor responds in good faith and, having been entrapped and no opportunity being afforded him to justify himself, is set upon and obliged to defend himself from personal violence, which he does to the best of his ability. Then highly exaggerated reports of the affair are circulated in the papers, and every possible effort is made to place him in the worst possible light. Those who are intimately acquainted with the gentleman against whom this outrageous act was committed do not need the indignant and emphatic denial that he makes of the alleged cause of the trouble. Nevertheless, the injury to him is one beyond repair and one that may happen to any other reputable man. Too vigorous measures can not be taken for the protection of medical practitioners or to prevent the repetition of such outrages by every process of law and appeal to public sentiment.

NEW JOURNALS AND JOURNALISTIC CHANGES.

Among the initial numbers that we have received during the week are that of the *West London Medical Journal* and that of the *Journal de neurologie et d'hypnologie*. The first-mentioned journal is a quarterly published under the auspices of the West London Medico-chirurgical Society, and edited by Mr. Percy Dunn, F. R. C. S. It presents a handsome appearance, and we have no doubt it will meet with favor. The neurological journal is edited by Dr. J. B. Crocq and published in Brussels. It is a semi-monthly. The well-known *Gazette hebdomadaire de médecine et de chirurgie*, of Paris, is now published twice a week, but in two different series, one every Thursday and the other every Sunday, either of which may be subscribed for separately. The *Mercredi médical*, which for some years has been the *Gazette's* satellite, has come to an end.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending January 14, 1896:

DISEASES.	Week ending Jan. 7.		Week ending Jan. 14.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	8	1	13	2
Scarlet fever	119	11	211	19
Cerebro-spinal meningitis	1	1	2	2
Measles	267	11	302	23
Diphtheria	273	29	314	38
Small-pox	0	0	1	0
Tuberculosis	128	106	76	105

A Visitor who is Wanted.—We are informed that a woman calling herself Mrs. Booty or Boody, who visits physicians' offices asking for money, is wanted at the Thirtieth Street Police Station. The first physician upon whom she calls asking for aid is asked to detain her and send word to the station.

The Boston Gynæcological Society celebrated its twenty-seventh anniversary on Thursday evening, the 9th inst., at the Parker House.

St. Mark's Hospital.—Dr. Hiram N. Vineberg has been made an attending gynæcologist to the hospital.

The Society of Alumni of Charity Hospital held its annual dinner at the Hoffman House on Wednesday evening the 15th inst.

Change of Address.—Dr. Matthias Lanckton Foster, to No. 22 East Forty-first Street, New York.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from January 5 to January 11, 1896:*

Ewen, Clarence, Major and Surgeon, is granted leave of absence for six months on account of disability.

Munn, Curtis E., Major and Surgeon, is granted leave of absence for two months, to take effect on or about January 21, 1896, with permission to go beyond sea.

Appointments.

Wilson, James Sprigg, to be Assistant Surgeon, with the rank of First Lieutenant, to rank from December 16, 1895. He will report in person without delay to the president of the Army Medical School for instruction.

Society Meetings for the Coming Week:

Monday, *January 20th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Cleveland Society of the Medical

Sciences; Hartford, Conn., Medical Society; Chicago Medical Society.

TUESDAY, *January 21st:* New York Academy of Medicine (Section in General Medicine); New York Obstetrical Society (private); Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Kings (annual) and Otsego (semi-annual —Cooperstown), N. Y.; Connecticut River Valley Medical Association (Bellows Falls), Vt.; Baltimore Academy of Medicine.

WEDNESDAY, *January 22d:* New York Academy of Medicine (Section in Laryngology and Rhinology); New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Metropolitan Medical Society, New York (private); Medical Society of the County of Albany, N. Y.; Philadelphia County Medical Society.

THURSDAY, *January 23d:* New York Academy of Medicine (Section in Obstetrics and Gynæcology); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Mass., Society for Medical Improvement (private); Pathological Society of Philadelphia.

FRIDAY, *January 24th:* New York Society of German Physicians; New York Clinical Society (private); Yorkville Medical Association, New York (private); Philadelphia Clinical Society; Philadelphia Laryngological Society; Cleveland Medical Society.

SATURDAY, *January 25th:* New York Medical and Surgical Society (annual).

Births, Marriages, and Deaths.

Married.

CHICK.—HIRSH.—In Brooklyn, on Wednesday, January 8th, Dr. Edson Spaulding Chick and Miss Eugenie Hirsh.

Died.

BLANCHARD.—In Brooklyn, on Wednesday, January 8th, Dr. James A. Blanchard, aged fifty-five years.

BOGART.—In Richmond Terrace, N. Y., on Friday, January 10th, Dr. Stephen Van Rensselaer Bogart, aged ninety-two years.

CARPENTER.—In North Greece, N. Y., on Thursday, January 9th, Dr. A. B. Carpenter, in the eighty-sixth year of his age.

REEVES.—In Chattanooga, Tenn., on Saturday, January 4th, Dr. James E. Reeves, in the sixty-seventh year of his age.

WEBSTER.—In Baltimore, on Monday, January 13th, Surgeon Warren Webster, of the army (retired), in the fifty-ninth year of his age.

Letters to the Editor.

THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

NEW YORK, *January 11, 1896.*

To the Editor of the New York Medical Journal:

SIR: The letter of the president of the New York Post-graduate Medical School and Hospital in your issue of to-day, and his challenge of the strictest examination of their objects and methods, suggest a few comments.

The Post-graduate is an applicant for and receiver of public and private charitable contributions, and its use of these contributions is a legitimate subject for examination. The institution is a dual one, and it carries on two distinct businesses—that of a school and that of a hospital—under one management and under one roof. Is it also done out of one purse?

In the board of trustees and in the faculty are many men whose reputations for the strictest probity, the most sensitive honor, are perfectly established. No one can be more interested than they in making it perfectly clear to every one that the institution is not profiting in one direction by funds given to it to be employed in another. The president (and the others) may honestly think their *school* a legitimate object for charity, but that does not justify the use for the school of money given to help the hospital. And upon this point, under such circumstances, there should be no quibbling, no drawing of fine-spun legal or ethical subtleties.

Let us look at the hospital part. According to the treasurer's report (*Eleventh Annual Report*, October, 1895), the expenses of the general hospital (that is, exclusive of the Babies' Wards) for one year were $62,197. Among the receipts we find: "Board of patients (hospital), $25,468; orthopædic, $2,138," making together $27,606. Also, "Apothecary's Department, $9,248." If this last item means that the patients in hospital paid that sum for their medicines and dressings, the 1,125 patients contributed $36,854 for their board and treatment. Possibly a portion of the last item comes from the dispensary.

Compare those items with the cost of caring for patients in other hospitals.

According to its last report, the New York Hospital cared for 4,878 patients at a cost (including everything) of $117,000.

St. Vincent's Hospital reports 2,431 patients in 1894, and I am credibly informed that the cost was about $65,000. These sums include the cost of the dispensary and ambulance.

In other words, these 1,125 patients could have been cared for in St. Vincent's or the New York Hospital for less than $30,000, for less than the sum they themselves actually contributed toward their care, and consequently all the money given to the Post-graduate Hospital for that purpose by the charitable might have been spared for some other work. A portion of this large excess may perhaps be accounted for by extra expenses, such as the furniture mentioned, and a part possibly by methods of bookkeeping; but it is so large—one hundred per cent.—that such reductions would not affect the argument.

In the face of such a showing what possible claim can the Post-graduate Hospital have upon public funds? What possible reason can there be to give it the $30,000 authorized by the Legislature?

What is the reason of this excessive cost? It can hardly be that the hospital is carelessly or extravagantly managed, for the president speaks of financial difficulties which must impose care and thrift. Can it be that these "hospital" expenses include those of the "school" as well? That the "interest," gas, fuel, printing ($1,400), furniture, etc., are chargeable in part to the school? Does the last item, "Deficit paid by the N. Y. P.-g. Medical School, $19,308," mean that that sum is all that the school pays for its plant and running expenses? Even that deficit appears to be reduced to $15,500 by a surplus in the accounts of the Babies' Wards.

Are the directors aware of these facts? Do they really

direct, or do they only give perfunctory approval to measures and accounts laid before them? Do they ever think of the terms that might be applied to such transactions if no other explanation is given than that contained in the *Annual Report?*

The president declares that the directors think public money should be given to the school (independent of the hospital), and declares that they will use every means in their power to obtain it. Possibly they are right, although a different opinion may be honestly held. But there surely can be no question that if they seek such aid they should do it openly and not under terms that may mislead. The act giving them $30,000 states, according to your citation of it, that it is for "charitable uses and purposes," and the same act includes a grant to a pure hospital, the Lying-in Hospital. Other similar grants are made for the "needy sick," and there is no indication in the language of this act of any thought of helping the educational part of the institution.

The only reason advanced by the president for a public gift to the school is that it is doing a great benefit to the city by bringing a large number of men to study there. The same argument might be advanced by any large dry-goods store, by any theatre, and even by some churches.

And what does it amount to in figures? The school reports 550 students. They stay a month, perhaps two, on the average. That would mean in board bills say, $20,000 or $25,000. The profit on that to landladies and purveyors might be ten per cent.—call it even twenty per cent.—$5,000. The argument is reduced to this: The existence of the school gives an opportunity to certain citizens to gain $5,000; therefore, the rest of the citizens shall pay the school $35,000—$30,000 to the general hospital and $5,000 to the Babies' Wards. To state it is to answer it.

There is also another matter which the trustees might do well to think over. Why do so many in the profession dislike and distrust the Post-graduate School? It is not because of the business in which it is engaged, for every one likes and respects other institutions doing the same work. It is, if I may venture an explanation, because the Post-graduate has pursued its aggressive course these thirteen years with an eye too closely fixed upon its own personal, private advancement, and an almost total disregard of the amenities of intercourse, and too often even of the rights of others; because it has sought its personal gain by working as an organization in our professional societies, and because it has done that work by methods that have given rise to widespread criticism and irritation. This has so lowered the tone and so shaken the cordiality in our societies that there is great danger that the valuable constructive work of the unselfish leaders of the last twenty years will be largely undone.

Will not the men who are in the Post-graduate, but who perhaps have taken no active part in its management, put an end to their antagonizing manners and to this baneful influence, and make the school what it might so easily be—an honored, respected, and useful part of the great medical community of the city? Medicus.

THE NEW YORK LYING-IN HOSPITAL.

New York, *January 15, 1896.*

To the Editor of the New York Medical Journal:

Sir: The last number of the *Journal* contains, on page 64, a quotation from a letter to the New York *Sun*, written by Dr. Roosa, in which he makes the following statement: "Besides, as I am informed, the Board of Estimate and Apportionment gave the sum allowed by the Legislature, in the same act with that referring to us, to a charitable midwifery institution near us, which liberally rewards its medical officers for their services." Will you kindly grant me, a member of the medical board of the New York Lying-in Hospital, which is the institution referred to by Dr. Roosa, sufficient space to correct the false impression made by this statement? No member of the medical board receives a salary or a "liberal reward" other than the medical experience of caring for the patients and of teaching the pupils of this "midwifery institution." Samuel W. Lambert, M. D.

PAQUIN'S ANTITUBERCLE SERUM AGAIN.

St. Louis, *December 30, 1895.*

To the Editor of the New York Medical Journal:

Sir: Kindly allow me a few words more on the subject of my letter in your issue of December 7, 1895, bearing on Dr. Hewetson's test of the serum I produce, on guinea-pigs. I stated somewhere in that article that "it is a *mathematical* fact *that an antitoxine can neutralize only a certain quantity of toxine.*" I wish to add that this has apparently been determined only with reference to diphtheria and tetanus, and I had those diseases in mind when I wrote. The *mathematical fact I to-day question*, because the neutralization by diphtheria antitoxine, according to several tests I have applied (following others more competent in Europe), does not seem to occur chemically. It is rather a stimulation of Nature to stronger defensive activity that takes place. My former statement on this point was such that it may create misinterpretation.

I wish to state also, in justice to those who assisted me financially this year, that my expression of "*meagre funds to experiment with*" referred to the work prior to the time when assistance was afforded, *i. e.*, to the time when I depended upon my own resources, before the firm of John T. Milliken & Co., now dissolved, existed and supplied means. No reflection whatever was intended on this firm.

I sincerely trust that you will afford space for this note.

Paul Paquin, M. D.

THE FILTRATION OF MILK THROUGH ABSORBENT COTTON.

111 East Fifty-seventh Street, New York, *December 31, 1895.*

To the Editor of the New York Medical Journal:

Sir: In his article on Infant Feeding published in *Pædiatrics* for January, 1896, and in his new book on *Therapeutics of Infancy and Childhood*, 1896, *Dr. A. Jacobi*, after speaking of my infant feeder (devised in 1889), refers to my method of filtering milk through absorbent cotton (*Archives of Pædiatrics*, July, 1894) by saying on page 502: "His (*Seibert's*) plan—developed later—to filter milk before sterilization, *is identical* with that recommended by *Auerbach.*"

In answer to this statement I submit the following letter, received by me from Dr. Norbert Auerbach, of Berlin (the author in question), a few days ago:

"Berlin, *December 16, 1895.*

"Dear Sir: In response to your letter of the 4th inst., I can but inform you that I have never published any report on the filtration of milk through cotton. I also do not remember of ever having made such experiments.

"Years ago I attempted to filter milk through asbestos pasteboard (*Asbest-Pappe*), *but did not publish these attempts*, because the cleansing of milk by means of the centrifuge (milk-separator) appeared to me the most feasible for large dairy establishments.

"That I highly appreciate the importance of cleanliness of milk before sterilizing in the household as well, is shown by the remarks I made in my last article (*Therapeutische Monatshefte*, January, 1895), which you cited in your letter.

"Respectfully yours, DR. AUERBACH."

The remarks Dr. Auerbach refers to read: "And to remove the impurities out of the milk by twice straining (*Seihen*) or to employ the centrifuge."

Dr. A. Jacobi listened in person to the report of my numerous experiments on filtering milk through absorbent cotton six months before Auerbach's remarks were published. In his criticism in his book Jacobi does not mention absorbent cotton; he only mentions my plan for the purpose of disposing of it as "identical" with a plan of Auerbach's. As Auerbach never devised any plan for filtering milk (according to his letter), and as the wording of Jacobi's criticism broadly hints at a possible plagiarism, and as Dr. Jacobi's book will be read by many and this statement, like all others therein, will be accepted as based on facts, I can but seek a partial redress by openly protesting against this statement, and the criticism implied therein, as misleading.

A. SEIBERT, M. D.

A WARNING.

6 EAST FORTY-NINTH STREET, *January 6, 1896.*

To the Editor of the New York Medical Journal:

SIR: Will you be so kind as to warn the profession, through the columns of your *Journal*, against a man who is canvassing among physicians of this city, representing himself as connected with the American Union Life Insurance Company, stating that I am the medical director, and soliciting them to apply for the position of medical examiner, at the same time asking from each a fee of $3? This is a fraud in every particular, and the profession should beware. I shall be very much obliged if you will give this notice.

LANDON CARTER GRAY, M. D.

Book Notices.

An American Text-book of Obstetrics for Practitioners and Students. By JAMES C. CAMERON, M. D., EDWARD P. DAVIS, M. D., ROBERT L. DICKINSON, M. D., CHARLES WARRINGTON EARLE, M. D., JAMES H. ETHERIDGE, M. D., HENRY J. GARRIGUES, M. D., BARTON COOKE HIRST, M. D., CHARLES JEWETT, M. D., HOWARD A. KELLY, M. D., RICHARD C. NORRIS, M. D., CHAUNCEY D. PALMER, M. D., THEOPHILUS PARVIN, M. D., GEORGE A. PIERSOL, M. D., EDWARD REYNOLDS, M. D., and HENRY SCHWARZ, M. D. R. C. NORRIS, M. D., Editor; ROBERT L. DICKINSON, M. D., Art Editor. With nearly Nine Hundred Colored and Half-tone Illustrations. Philadelphia: W. B. Saunders, 1895. Pp. 1009.

PERHAPS no greater praise can be given this work than to say that its faults are more noticeable than those of any medical work we have seen for a long time. The general character of the articles is so exceptionally good that the faults of the book obtrude themselves with more prominence than usual. The faults, moreover, are for the most part of a kind which can not be easily forgiven in a work of the pretensions and promises of the book under review. They seem almost too paltry, individually, to occupy the attention of the reviewer; and yet it is not fair to those of the profession who have been waiting eagerly for a year for this particular book to pass them by without some comment.

The faults belong to the publisher, to the editor, and to the contributors. There are inexcusable errors in proof-reading; not very many, it is true, but too many for a book of this character. Again, there are some sentences in the book the meaning of which is not at all plain. Whether the blame in these instances rests with the publisher, the editor, or the contributors, it is difficult to say. In some of the articles also are to be found statements which are not correct; others there are which should not be made with such positiveness, since they do not by any means represent the general opinion of obstetricians, and therefore may be easily misconstrued by the general practitioner and the student. Such faults contribute to an irresistible conviction that, at the last, the work was hurried both by the publisher and by the editor and contributors. Haste, with its inevitable concomitants, can not be forgiven in such a book. It seems sad indeed that the *Text-book* should be marred by faults which more care and attention would, beyond question, have obviated.

On the other hand, scarcely enough can be said in praise of the book. It is encouraging at last to see many of the ancient and time-honored fallacies of obstetric text-books unceremoniously dropped. In this respect the *Text-book* is particularly refreshing. Perhaps the most noticeable improvement over any other medical books which we have seen is the extraordinary excellence of the illustrations. They are wonderfully clear; they are uniform; they are modern where teaching has changed; and they have caught the *speaking* quality, which is so elusive, to a degree that would not have seemed possible. We are gratified also to see the classical illustrations of Smellie reproduced. They have never been equaled, despite the many later attempts to excel them.

All the articles are strongly, ably, and boldly written. The bibliography is extensive and well chosen. Although the work is so scientific and exhaustive as to be of the greatest value to the practitioner, it is at the same time perfectly adapted to the purposes of the medical student. We wish especially to call attention to the chapters on the Pathology of Pregnancy, the Mechanism of Labor, and the Physiology and Pathology of the Newborn Infant. We are astonished at the accuracy, clearness, and thoroughness with which these subjects are treated. Yet to say this is to make an unfair comparison; for the same may truly be said of every other chapter in the book. These particular chapters, however, contrast more vividly with all previous text-books of obstetrics. We can not commend the work too highly to practitioners, instructors, and students as a text-book, as a book of reference, and as a collection of most delightful chapters for reading in a leisure hour.

The Practice of Massage. Its Physiological Effects and Therapeutic Uses. By A. SYMONS ECCLES, M. B. Aberd., Member of the Royal College of Surgeons, England, etc. London and New York: Macmillan & Co., 1895. Pp. xii–377. [Price, $2.50.]

THIS book deserves to be read and preserved, for primarily it is one the perusal of which will bring enjoyment as well as profit, and secondarily it will serve well for reference upon a subject much abused and too often badly taught.

The volume opens with a description of the practice of massage in its simpler procedures, for the absence from it of those fantastic and often unworthy practices which do so

much to degrade what is a rational and truly scientific treatment is to be noted and commended. The physiology of massage is next considered, and among the valuable features of this section is the repeated statement of the effect massage has in diminishing the resistance of the skin to the passage of electrical currents, a very practical matter indeed. The increased power of cutaneous absorption resulting from massage is vigorously pointed out, and it is well suggested that rubbing ought oftener to be done where cutaneous absorption is desired, the medicament then to be applied in powder rather than, as is the usual method, to have the remedy incorporated in an ointment and rubbed into the skin, previously unprepared. This indeed must appear rational, for the effect of dry massage, if skillfully done, is to diminish the oiliness of the epidermis from mechanical reasons and thus to increase its permeability.

The therapeutics of massage occupies the rest, and the bulk, of the book. It can not be said to be unusually original, but it is well presented, conservative, and free from exaggeration. It is a little surprising to find abdominal massage so strongly recommended for chronic diarrhœa, but it is not unreasonable, and, when we reflect upon it, its reasonableness grows strong. Certainly it would appear to have aided in curing. The entire temper of the book is so dignified, so reasonable, and so scientific that it must be considered as a valuable acquisition to a branch of medical literature which, though it has some few such works, was sadly in need of more.

An Elementary Course in Experimental and Analytical Chemistry. By John H. Long, M. S., Sc. D., Professor of Chemistry and Director of the Chemical Laboratories in the Schools of Medicine and Pharmacy of Northwestern University. Illustrated. Chicago: E. H. Colegrove & Co., 1895. Pp. 507. [Price, $3.]

The number of books of this kind is so great and the field so well filled that it is hard to improve on what we already have. The author can be commended for having taken up volumetric analysis in a number of well-written chapters. The chapter devoted to the examination for poisons—eleven pages—seems somewhat abridged for practical use by medical students. The introduction of the combining weights of the different elements under their separate consideration, as well as in a preceding table, would be an improvement, also more exact information in regard to "occurrence." We are told that sulphur exists in a free state in several localities—a rather indefinite statement. The text is clear, the experiments are well chosen, and the work is well adapted to the requirements of the practical student.

The Urine in Health and Disease, and Urinary Analysis Physiologically and Pathologically Considered. By D. Campbell Black, M. D., L. R. C. S. Edin., F. F. P. and S. Glas., Professor of Physiology in Anderson's College Medical School, etc. Philadelphia: Lea Brothers & Co., 1895. Pp. xiii–1 to 246.

Originality is not a pronounced characteristic of recent works upon urology and uranalysis. The advance in this department of medicine is slow and new discoveries of importance are infrequent. Nevertheless, a worthy and useful presentation of a previously well-taught subject is welcome, even if it is not glittering in its orginality, and therefore Dr. Black's book is acceptable. The work is divided into the customary three parts, on the anatomy and physiology of the kidney, on the normal elements of the urine, and on abnormal constituents of the urine; and the subject matter is uniformly well presented. Therapeutical considerations are added to the discussions of morbid constituents, but are far too brief and fragmentary to be very useful. This, however, is a fault of works of this size and kind almost universally. A chapter upon the determination of the chemical composition of a calculus is exceedingly well arranged and serviceable, and very excellent, too, is the chapter on medicaments and accidental elements in the urine. The book shows careful and conscientious work, and its errors are few and unimportant. The assertion that "he observed the following results" is bewildering, it is true, for no individual *he* has been within eyesight previously for several pages; but trivial errors like this will creep into every book. The work of Dr. Black is deserving of success.

Catarrhal Diseases of the Respiratory Passages. By J. M. G. Carter, M. A., M. D., Sc. D., Ph. D., Professor of Preventive and Clinical Medicine in the College of Physicians and Surgeons, Chicago, etc. Chicago: E. H. Colegrove & Co., 1895. Pp. 11 to 135. [Price, $1.]

The object of this little volume is to show the influence which changes in the weather exert upon the prevalence of catarrhal diseases of the respiratory tract, especially in the lake region. Barring the presence of pathogenic organisms, says the author, the most efficient causes of these diseases are extreme variations in temperature, high winds, a moist atmosphere, a large percentage of cloudiness, marked variations in ozone, and differences in barometric pressure, whether due to differences in temperature and moisture or not. Numerous statistics drawn from personal experience and other sources are given to illustrate points in ætiology. A number of pages are devoted to the relative frequency of bronchitis, influenza, whooping-cough, and pneumonia in various countries. Croup and bronchitis do not prevail extensively along the Atlantic and Gulf coasts.

In addition to the consideration of climate, the different chapters of the book deal with other factors in ætiology and with the symptomatology and treatment of the various affections of the respiratory tract, also with the connection between these and phthisis and broncho-pneumonia. In Chapter II the author speaks of "checking" an attack of quinsy. This corresponds to phrases we so often hear, such as, "very near being pneumonia," "just escaped typhoid fever," etc. The disease is present or it is not, and the use of such expressions is inexcusable. Typographically, there is room for improvement. Among the errors we have noticed are "chlorate of potass.," "pnemonia," "calk mixture," and "trachitis." In many places abbreviations detract from an otherwise pleasing text. There are no new suggestions in regard to treatment, but the means ordinarily employed are given. The chief interest of the work lies in the consideration of the causal relations between climate and disease.

A Practical Treatise on Materia Medica and Therapeutics. With Especial Reference to the Clinical Application of Drugs. By John V. Shoemaker, M. D., LL. D., Professor of Materia Medica, Pharmacology, Therapeutics, and Clinical Medicine in the Medico-chirurgical College of Philadelphia, etc. Third Edition. Thoroughly revised. Philadelphia: The F. A. Davis Company. London: The F. J. Rebman Company, Limited, 1895. Pp. ix–1108. [Price, $5.]

The third edition of this work is in many ways an improvement upon its predecessor. Its production in one volume instead of in two, as heretofore, is a distinct advantage.

Its type and printing are superior to those of former editions. Its lists of official drugs and preparations conform to the *Pharmacopœia* of 1890. It contains much information upon the most important of the recently introduced drugs, and its matter upon serum therapy is thoroughly modern. The character of the work, however, remains unaltered, and, though it doubtless has been and will continue to be a valuable one from the standpoint of the pharmacologist, it is scarcely adapted to the necessities of the student and the practitioner. It is too inclusive, as we have said before; it contains a vast amount of therapeutical detritus and its many valuable features are thus obscured. Had Dr. Shoemaker been writing a dispensatory his generosity had scarcely been greater, but this is "a practical treatise," at least so its title-page informs us. Practical in contradistinction to theoretical the book certainly is, but practical in its larger meaning, serviceable, it is not.

Transactions of the American Otological Society. Twenty-eighth Annual Meeting, Pequot House, New London, Conn., July 16, 1895. Vol. VI, Part II. Published by the Society. Mercury Publishing Company, Printers, New Bedford, Mass., 1895.

This publication presents, as usual, a large number of very valuable papers on subjects connected with ear disease. The papers are fitting productions to be read before the leading otological society of this country; but to give a proper idea of them a review of each would be necessary. For obvious reasons this is inexpedient.

BOOKS, ETC., RECEIVED.

The American Year-book of Medicine and Surgery. Being a Yearly Digest of Scientific Progress and Authoritative Opinion in all Branches of Medicine and Surgery drawn from Journals, Monographs, and Text-books of the Leading American and Foreign Authors and Investigators. Collected and arranged with Critical Editorial Comments by J. M. Baldy, M. D., C. H. Burnett, M. D., Archibald Church, M. D., C. F. Clarke, M. D., J. Chalmers DaCosta, M. D., W. A. N. Dorland, M. D., V. P. Gibney, M. D., Homer W. Gibney, M. D., Henry A. Griffin, M. D., John Guitéras, M. D., C. A. Hamann, M. D., H. F. Hansell, M. D., W. A. Hardaway, M. D., T. M. Hardie, B. A., M. B., C. F. Hersman, M. D., B. C. Hirst, M. D., E. Fletcher Ingals, M. D., W. W. Keen, M. D., H. Leffmann, M. D., W. H. Norrie, M. D., H. J. Patrick, M. D., William Pepper, M. D., D. Riesman, M. D., Louis Starr, M. D., Alfred Stengel, M. D., N. G. Stewart, M. D., and Thompson S. Westcott, M. D., under the General Editorial Charge of George M. Gould, M. D. Profusely illustrated with Numerous Woodcuts in Text and Thirty-three Handsome Half-tone and Colored Plates. Philadelphia: W. B. Saunders, 1896. Pp. vi–17 to 1183. [Price, $6.50.]

Diphtheria and its Associates. By Lennox Browne, F. R. C. S. Ed., Senior Surgeon to the Central London Throat, Nose, and Ear Hospital, etc. Illustrated by the Author. London: Bailliere, Tindall, & Cox. Philadelphia: J. B. Lippincott Company, 1896. Pp. xii–272. [Price, $5.]

The Medical Digest, or Busy Practitioner's Vade-mecum. Being a Means of Readily Acquiring Information upon the Principal Contributions to Medical Science during the Last Fifty Years. By Richard Neale, M. D. Lond., Member of the Dutch Medical Society of Batavia, Java. Third Edition. London: Ledger, Smith, & Co., 1896. Pp. xi–794.

Appendix to the Medical Digest, or Busy Practitioner's Vade-mecum, including the Years 1891–'92–'93–'94, and to August, 1895. By Richard Neale, M. D. Lond., Member of the Dutch Medical Society of Batavia, Java. London: Ledger, Smith, & Co., 1896. Pp. 206.

The Life of Sir Henry Halford, Bart., G. C. H., M. D., F. R. S., President of the Royal College of Physicians; Physician to George III, George IV, William IV, and to Her Majesty Queen Victoria. By William Munk, M. D., F. S. A., Fellow and Late Vice-president of the Royal College of Physicians of London. London and New York: Longmans, Green, & Co., 1895. Pp. xv–284.

Climate and Health. Edited under the Direction of Professor Willis L. Moore, Chief of the Weather Bureau, by W. F. R. Phillips, M. D. Number Four. A Summary of Statistics for the Four Weeks ending October 26, 1895. [United States Department of Agriculture.]

Health Notes for the Seaside, with Special Reference to Whitby and District. By A. C. Dutt, B. A., M. B. (Cantab.), Associate of King's College, London, etc. Whitby: Horne & Son, 1895. Pp. 5 to 61.

The Composition of Expired Air, and its Effects upon Animal Life. By J. S. Billings, M. D., S. Weir Mitchell, M. D., and D. H. Bergey, M. D. Washington: Published by the Smithsonian Institution, 1895. Pp. 1–80. [Smithsonian Contributions to Knowledge. 989. Hodgkins Fund.]

Eleventh Annual Report of the New York Post-graduate Hospital. For the Year ending October 1, 1895.

Fifty-fifth Annual Report of the Colored Home and Hospital for the Year 1894 to 1895.

State Control in Medicine. The Introductory Address to the Sixty-fifth Lecture Course of the Albany Medical College. Delivered September 24, 1895, by Willis G. Tucker, M. D., Ph. D., Professor of Inorganic and Analytical Chemistry.

Metatarsalgia. Morton's Painful Affection of the Foot. Its Causes, Symptoms, and Treatment. With Illustrative Cases and Bibliography. By Thomas K. Morton, M. D. [Reprinted from the *Transactions of the Philadelphia Academy of Surgery.*]

The Importance of Careful Examination of the Urine before Surgical Operations. By Arthur R. Elliott, M. D. [Reprinted from the *Chicago Medical Recorder.*]

The Electric Light Bug, or Belostoma. By Theodore William Schaefer, M. D., Kansas City, Mo. [Reprinted from the *Medical Index.*]

Brain Surgery for Epilepsy. By B. Merrill Ricketts, M. D., Cincinnati. [Reprinted from the *Cincinnati Lancet-Clinic.*]

Neuralgia of the Fifth Nerve; Treatment. By B. Merrill Ricketts, M. D. [Reprinted from the *Cincinnati Lancet-Clinic.*]

Rupture of the Left Lateral Ventricle. By B. Merrill Ricketts, M. D. [Reprinted from *Medicine.*]

The Modern Surgery of Serous Cavities. By B. Merrill Ricketts, M. D. [Reprinted from the *Railway Surgeon.*]

. Laryngeal and Bronchial Diphtheria. By W. K. Jaques, M. D. [Reprinted from the *Chicago Medical Recorder.*]

The Kinetic and Therapeutic Energy of Drugs. By J. W. McLaughlin, M. D., Austin, Texas. [Reprinted from the *Transactions of the Texas State Medical Association.*]

An Outline of the Physical Theory of Fermentation, Immunity, and Infection, and its Bearing on the Rationale of Serum Therapy. By J. W. McLaughlin, M. D. [Reprinted from the *Transactions of the Texas State Medical Association.*]

The Bacteriology of Dengue. By J. W. McLaughlin, M. D. [Reprinted from the *Texas Medical News.*]

Chronic Seminal Vesiculitis, with Hæmorrhage. By S. P. Collings, M. D., Hot Springs, Ark. [Reprinted from the *Cincinnati Lancet-Clinic.*]

Miscellany.

Stypticin in the Treatment of Uterine Hæmorrhage.—In the December number of the *Therapeutische Monatshefte* there is an article on this subject by Dr. S. Gottschalk, of Berlin, an abstract of which appears in the *Therapeutische Wochenschrift* for December 22d. Stypticin, it seems, is the trade name of cotarnine hydrochloride. Chemically, cotarnine, which in combination with opianic acid forms the narcotine found in opium, is very closely related to hydrastinine. Dr. Martin Freund has found cotarnine hydrochloride comparatively non-poisonous to animals and a very efficient hæmostatic in gynæcological practice. It is described as an amorphous powder, almost of a sulphur-yellow color, readily soluble in water, forming a solution which becomes cloudy on exposure to light.

After meeting with failures at first, in consequence of using doses that were too small, Dr. Gottschalk increased them and witnessed brilliant results. He gave the drug by the mouth in doses ranging up to three quarters of a grain five or six times a day. Subcutaneously, he employed a sterilized ten-per-cent. watery solution, and in cases of profuse metrorrhagia injected three grains (thirty drops of the solution) deep into the gluteal muscles once a day. No unexpected effects were noted, save with a few patients who did not bear opium well, and in them the drug appeared to act as a sedative and analgetic, so that it was found particularly serviceable in cases in which, together with uterine hæmorrhage, there was dysmenorrhœa. In this respect Gottschalk finds cotarnine superior to ergot and hydrastis, and he finds it also a suitable drug for protracted use. He is not yet prepared to lay down the indications for its employment completely, but on the strength of the observations he has made up to the present time he draws the following conclusions: Cotarnine acts promptly in hæmorrhages due purely to uterine subinvolution; if, however, there are remnants of the ovum retained in the uterus, ergot and its preparations, in conjunction with hot irrigations, work better. The author recommends cotarnine in hæmorrhages due to fungous endometritis, especially if they are of ovarian origin, but, of course, curetting or intra-uterine cauterization will be required for a radical cure. In hæmorrhages due to fibroids and in those associated with the climacteric cotarnine is of service. On the other hand, in hæmorrhages that are secondary to parametric exudations cotarnine is inferior to hydrastis and hydrastinine. In purely congestive menorrhagia, without a substratum of organic disease, the author has met with good results from the concurrent use of cotarnine and hydrastis or hydrastinine. The remedy is powerless against hæmorrhages that depend on the presence of polypous growths in the uterine cavity, no matter how small they may be. Cotarnine is contra-indicated in cases of threatened abortion, also in uterine hæmorrhages occurring in the course of pregnancy. It has not yet been definitively ascertained whether cotarnine acts on the walls of the blood-vessels or on the muscular tissue of the uterus. In cases of menorrhagia the author thinks the hæmostatic effect of cotarnine is rendered more certain by giving the remedy for four or five days before the flow is expected, but in reduced doses (not more than 0·035 of a grain), four times a day. As soon as the flow begins the doses are to be doubled. At the height of a profuse menstrual flow as much as three grains may be injected into the gluteal muscles, and this may be repeated for several successive days without any unpleasant result. For internal use, it is best to order cotarnine in pills or in gelatin capsules. When given by the mouth it acts more slowly than when injected into the tissues.

Myositis of the Recti Abdominis Muscles.—In a clinical lecture which is published in the *Union médicale* for December 21st, Dr. Clado gives an account of the case of a young man, seventeen years old, who presented a localized inflammatory tumefaction in the hypogastric region, which followed rather distinctly the form of the sheath of the rectus muscle in its lower part. Nine days before his entrance into the hospital the patient had felt some uneasiness in the abdomen, although there had been no appreciable cause. There was no sharp pain and no swelling, nor was there any perceptible change in the hypogastric region or any discoloration; of this he was perfectly positive. The uneasiness had not prevented him from working, and it was not until four days later that he had felt obliged to remain in bed. At that time the symptoms changed considerably; the pain became more pronounced and a slight swelling appeared in this region, accompanied by a slight rise in temperature and some digestive troubles, such as anorexia and constipation. An examination revealed the following symptoms: From the pubes almost to the umbilicus an ovoid tumefaction was found, with its long axis vertical, which occupied the median line; the skin was red and shining and hot on palpation. In all this region a hard puffiness was found which was limited in a vertical direction by the pubes below and by the umbilical region above; laterally, it extended on each side for a distance of from eight to ten centimetres from the linea alba, and was limited by a vertical line beyond which the tissues of the abdominal wall preserved their normal characteristics. The mass occupied nearly a square space; it was movable transversely, but immovable in a vertical direction. Although there was slight subcutaneous œdema, no fluctuation was observed, and the tumefaction was very hard in consistence. Pressure was painful over the entire tumefied surface. When the patient remained quiet no pain was felt, but when he moved there was considerable pain. An examination of the other organs and of the urine revealed nothing whatever.

The diagnosis, says Dr. Clado, does not offer any difficulty; the tumefaction presented the characteristics of a subacute inflammatory lesion in a state of evolution. The question was, What was the anatomical seat of this inflammation, and what was its cause?

Inflammation of the subcutaneous connective tissue, he says, is easily recognized. From the very fact that this layer is continuous with the general subcutaneous connective tissue no special limitation is assigned to the development of the phlegmon. The inflammatory tumefaction may be median or lateral; it may be very limited or greatly extended; in all cases it is superficial. In the preceding case it was not influenced by the contractions of the rectus muscle.

The inflammatory tumefaction which is situated in the sheath of the rectus muscle presents different characteristics whether it is the connective tissue which is inflamed, or the rectus muscle itself, the inflammatory tumor affects a particular form. This fact was demonstrated in the preceding case.

When the inflammation is situated in one only of the two sheaths the tumor shows the same characteristics, but it is limited to one side, to the right or to the left of the median line. Finally, a tumor which is produced by inflammation of the connective tissue of Retzius's cavity also occupies the hypogastric region; it is median and symmetrical, but less limited; it often extends as far as the umbilicus and occasionally invades the iliac fossa on one side or on both sides at

the same time. In order to be assured, says the author, that the seat of the affection is Retzius's cavity, contraction of the recti muscles must be produced, and it will be seen that the two muscles then constitute a resistant surface which tends to conceal the tumor.

According to these observations, says Dr. Clado, no doubt can exist as to the seat of the inflammation in the foregoing case; it was clearly in the sheath of the recti muscles and at their expense that the inflammation developed.

With regard to the cause, says M. Clado, the following only can be considered as factors in the causation of the disease in this case, for the patient had been in perfect health up to the time of his entrance into the hospital: Exaggerated muscular exercise in the performance of his work, which was that of a mason, or chronic intestinal infection resulting from habitual constipation, from which the patient suffered. It may be admitted, he says, that, in a young man in the period of physical development, the overtaxing of these muscles caused small bloody effusions and thus prepared the way for the rupture of the muscular fibres. It is possible also to explain the outbreak of myositis by the habitual constipation and the consecutive infection of the small intramuscular effusions. On this hypothesis, says the author, the source of the infection would be the intestine. Moreover, he says, without even seeking further for the origin of the rupture of the muscular fibres, simple overtaxing of the muscles seems to him sufficient to explain the localization of the disease in the recti muscles, especially as in this case, the infection being very slight, the myositis which resulted from it progressed toward resolution. A more serious infection, moreover, would have presented a tendency to suppuration.

In these benign cases, says the author, the treatment is very simple, and consists principally in rest in bed and local applications of resolvent compresses. If there is danger of pus collecting the swelling must be opened at once, for, although the sheath of the rectus muscle ordinarily suffices to check purulent outbreaks, spontaneous openings have formed into the peritoneal cavity. The thinness of the posterior layer of the sheath of the rectus muscle should lead us to fear this occurrence.

A Case of Goring of the Abdomen by an Elephant's Tusk.—In the January number of the *Edinburgh Medical Journal* Dr. T. K. Macdonald, of the British Indian Medical Service, relates the following case, which, he says, is rare and remarkable, and, in these days of advanced surgery, may be of interest:

Gudir Mea, a Mohammedan, about forty-six years of age, an elephant driver, of spare frame, and of the most strictly temperate habits, was admitted into the Sanipore Camp Hospital on the 12th of November, 1894, at 9 A. M. It appears, says the author, that he was sitting down in front of the elephant, of which he had charge, when the animal, which took fright at a passing railway train, charged his poor keeper, pinning him through the abdomen to the ground, afterward tossing him off his tusk into the air, and leaving him for dead on the hard camping ground. On his admission the patient was found to be completely collapsed, and his wounds and injuries were so extensive that the author expected the man to die immediately. On seeing him, at 11.30 A. M., the author found him pulseless, with extremely feeble heart's action, and the breathing gasping. After some trouble, he managed to introduce two ounces of brandy into his stomach with a gum-elastic tube and small glass filler, and gave him a subcutaneous injection of morphine afterward, on finding that the heart responded to the stimulant. On examining his injuries the author found the left side of the scrotum torn from base to apex, and the left testicle and cord hanging out through the wound; there was a laceration of the skin and subcutaneous connective tissue extending at right angles to the scrotal wound from the pubes to the left iliac spine, large enough to admit the hand, which could be passed up between the muscles of the abdomen as far as the umbilicus, and laterally as far as the upper margin of the iliac region on each side, and the abdominal muscles were felt to be lacerated to the extent of four inches, and several coils of intestine protruded through the opening, which was situated in a line passing obliquely upward from the middle of the left groin toward the umbilicus. In the right lumbar region was found another lacerated wound irregularly oval in shape and three inches in diameter, its lower margin just touching the junction of the posterior and middle thirds of the crest of the ilium, and the finger could be freely passed into the abdominal cavity. Very little hæmorrhage took place from either of the wounds. On learning the history and looking at the wounds, says the author, it was evident that the elephant's tusk had passed obliquely through the man's abdomen from the left iliac to the right lumbar region. The tusks were examined and the right tusk was found smeared with blood to a point about sixteen inches from the tip, and to be fourteen inches in circumference at a point eight inches from the tip. The tip of the tusk was, fortunately for the patient, shaped like the smaller end of a turkey's egg, and not so pointed as many elephants' tusks are. Finding that the patient had rallied, and that it was well to attempt to give him a chance for his life by exploring his abdomen for possible bleeding vessels or wounded intestine, and by cleaning out the sand and dirt left by the tusk as it had been withdrawn from the sandy ground, the author, with the help of a hospital assistant and a lay friend, proceeded to give him chloroform, which he took well. Dr. Macdonald then laid open the flap of skin in the left iliac region, exposing the deep abdominal wound, which he enlarged upward and downward, so as to enable him to thoroughly explore the abdominal cavity, making a long wound passing obliquely from the umbilicus to about the middle of Poupart's ligament. He found the intestines intact and no blood-vessels injured. There was a considerable quantity of blood mixed with grains of sand found among the coils of the intestine. This he removed as carefully as was possible with a tepid boric-acid lotion and the gentle use of sponges. After removing every particle of sand and drop of blood in the abdominal cavity, he closed the front deep abdominal wound with catgut in the form of a continuous suture passing deeply through the muscles and including the peritonæum; the skin wound was closed with horsehair suture. The lumbar-region wound was partially closed by deep catgut and superficial horsehair sutures, and a large drainage-tube passed into the abdomen through it. Perchloride-of-mercury lotion (1 to 3,000) was used to purify the wounds both before and after the operation, and a boric-acid lotion for cleansing the abdomen. Mercurial dressing and carbolized tow were used throughout the case, and antiseptic precautions were employed as far as circumstances admitted. With the exception of some sloughing of the skin over the abdomen, the patient made an uninterrupted recovery, and his temperature never rose above 101° F., on the third day. He left the hospital at Chapra, where he had been removed from Sanipore a fortnight after the accident, within ten weeks, with his wounds completely healed up and in excellent health. The only regret is, says Dr. Macdonald, that the patient left the hospital before he could be photographed, for, being a Mo-

hammedan, he had strong religious scruples against having his picture or that of an animal taken.

Inorganic Cardiac Murmurs in Children.—The *Presse médicale* for December 25th contains an abstract of an article which was published in the *Revue des maladies de l'enfance.* The author shows that, in children as well as in adults, a cardio-pulmonary murmur may exist which is independent of all organic lesions. This murmur does not appear until toward the age of three years and a half, and its frequency then increases progressively up to the twentieth year. The author has demonstrated this fact by his researches, which include almost four hundred observations. The diagnosis of cardio-pulmonary murmur presents considerable importance, he says, as it does away with the fears which the symptoms of organic lesions of the heart always give rise to. The rules laid down by Professor Potain to establish this diagnosis in adults are, says the author, applicable to children. The appearance of the murmur seems to be favored by some diseases, such as chorea, scarlatina, and rheumatism, while other affections, such as pneumonia, diphtheria, and whooping-cough, seem to have no influence whatever.

Cardiac Troubles due to Thoracic Deformity.—At a recent meeting of the *Société médicale des hôpitaux*, a report of which appears in the *Mercredi médical* for December 25th, M. Huchard presented a patient who suffered from palpitation and extra-cardiac murmurs which had supervened apart from rhachitis and growth. The cardiac symptoms seemed to be due to a deformity resulting from the elongation of the thorax. The patient had been treated for hypertrophy of the heart, but this, said M. Huchard, had been relative only, and the elongation of the thorax had been the cause; in fact, there had been rather atrophy of the heart.

M. Marfan said that, admitting that elongation of the thorax existed, he could not see what relation there was between the deformity and the cardiac troubles. M. Hayem remarked that so-called cardiac symptoms were often due to dyspepsia. On the other hand, a hunchback often presented dyspnœa and palpitation on the least effort. M. Marfan thought that hunchbacks who suffered with dyspnœa often had lungs that were too small, and that this diminution was sometimes to half their normal size; from this the dyspnœa and respiratory troubles arose.

The Indigestibility of Milk.—In an article on this subject, published in the *Journal des praticiens* for December 21st, the writer states that, owing to the indigestibility of cow's milk, physicians are sometimes obliged to give their patients ass's milk, which contains a casein that is coagulated in smaller flocci. In all cases, he says, it is better to institute a progressive milk diet, and the addition of fifteen grains of sodium bicarbonate to about three ounces of milk prevents the coagulation of the casein in large flocci and aids in the digestion of the milk. Many researches have shown that calcium chloride cuts short the gastric digestion and cures diarrhœa. The following solution may be employed in the latter case: Calcium chloride, fifteen grains; water, three ounces. A dessertspoonful of this solution may be added to a pint of milk. A solution of lactic acid in the proportion of seventy-five grains to fifteen ounces of water may also be used with good effect.

Gaucher and Gallois, says the writer, in their recent work on the treatment of diseases of the kidneys, state that if milk is badly digested, particularly in uræmia, it is often because the chemical operations within the stomach indicate an excess of pepsin. In this case kephir gives good results. If it is to be absolutely substituted for a milk diet, that which is slightly fermented only should be recommended, as it contains less alcohol and is therefore a wholesome remedy in the gastro-intestinal troubles of nephritis, and especially of interstitial nephritis. As kephir is a diuretic, says the writer, it may act advantageously in other uræmic manifestations. If it is unpleasant to the taste, M. Hayem recommends diluting it with a little Seltzer water or adding sugar to it.

A Treatment for Epilepsy.—The *Presse médicale* for January 1st states that, according to M. Bekhtereff, of St. Petersburg, the combination of caffeine and *Adonis vernalis* with a bromide gives very remarkable results in the treatment of epilepsy. He usually employs the following solution: Leaves of *Adonis vernalis*, from 30 to 50 grains; boiling water, 5½ ounces. After this has been filtered the following are added: Potassium bromide, from 114 to 170 grains; caffeine, from 2 to 3 grains. From four to eight teaspoonfuls are to be taken every day in water or in sweetened milk.

It is said that M. Bekhtereff has not yet met with a single case of epilepsy in which the disease proved absolutely refractory to the employment of this medication. He has always obtained either a complete cessation of the attacks or a marked diminution in their intensity and frequency.

The Treatment of Chilblains.—In an article on this subject, published in the *Presse médicale* for December 28th, the writer deals with the local and general treatment of the affection and with its prophylaxis. In the severe forms of non-ulcerative chilblain, when the skin is red, tense, and shining, he says, moist applications should be used; the fingers, the hands, and the feet should be wrapped in aseptic compresses saturated with a decoction of walnut leaves, in the proportion of from 150 to 225 grains of the bruised leaves to a pint of water. After the irritation has been allayed the wet dressing is replaced by one of the following preparations: 1. Boric acid, 15 grains; tannin, 4·5 grains; vaseline, 150 grains. 2. Starch and lycopodium, each, 150 grains; tannin, 4·5 grains. In the less severe form it is sufficient to apply the decoction night and morning, and during the day to use one of the preparations previously mentioned.

Ulcerated chilblains, says the writer, may be treated like ordinary wounds. At first they are to be carefully washed with Van Swieten's liquor, then compresses saturated in this solution, to which an equal quantity of water has been added, are to be applied. Touching the ulcerated parts with tincture of iodine or with camphorated naphthol is efficacious, and then an aseptic dressing is to be applied, which consists of fine tarlatan covered with borated vaseline or with glycerole of starch. When the chilblains are granulating we should touch the affected parts lightly with silver nitrate. In obstinate cases a plaster of zinc oxide should be employed.

With regard to the general treatment, says the writer, this should not be neglected, especially in scrofulous persons. Cod-liver oil and iron iodide may, in this condition, be very beneficial, provided they are employed for several consecutive years.

In regard to the prophylaxis, the influence of preventive treatment is indisputable. Persons who are predisposed to chilblains should be advised to take a great deal of exercise and to avoid, as much as possible, prolonged exposure to cold; the sudden change from heat to cold and *vice versa*, according to Brocq, are equally harmful. The continued employment of very hot water during the winter often prevents an attack of chilblains, and is a prophylactic measure which should certainly be tried. The following preparation, says the writer, has been successfully employed by M. Brocq: Quinine sulphate and ergotine, each, 0·75 of a grain; powdered digitalis

leaves, 0·075 of a grain; extract of belladonna, 0·015 of a grain. The dose is from two to four such pills a day, which are to be taken before meals. This treatment should be begun before the time when the chilblains usually appear and continued during the winter, with occasional intervals of rest. This treatment should be employed in severe and obstinate cases, as it acts as a vaso-motor regulator and as a regulator of the circulation.

Argonin in the Treatment of Gonorrhœa.—In the *Centralblatt für Chirurgie* for December 21st there is an abstract of an article on the use of argonin (argentum-casein) in the treatment of gonorrhœa, by Dr. J. Jadassohn, published in the *Archiv für Dermatologie und Syphilis*, xxxii, 1, 2. So long, says the writer, as the treatment of gonorrhœa does not lead with certainty to a perfect cure in every case, trials of new remedies and methods are not only allowable, but imperative. He is firmly convinced that a substantial advance has already been made in the use of antiseptic medication, but much yet remains to be done, both from the theoretical and from the practical standpoint. As regards Finger's contention that it is impossible to cure gonorrhœa with antiseptics, because we can not make them pursue the gonococci into the glandular passages, a like distrust must be had of the "serotactic" and "leucotactic" (*sero- und leukotaktischen*) properties of the gonococci. What we must strive to accomplish is to kill the pathogenic germs as early as possible without doing unnecessary damage to the mucous membrane. Hitherto the most trustworthy agents for this purpose have been weak solutions of silver nitrate (1 to from 3,000 to 4,000), ichthyol, and argentamine. The writer has employed argonin in a great number of cases of gonorrhœa, both in men and in women, since Meyer's investigations showed that it was less irritating than silver nitrate and argentamine, and that in strong solutions it killed the gonococci promptly, and he has been led to the following conclusions: 1. Both experimental and clinical investigations have shown that argonin kills the gonococci in a short time, notwithstanding its lack of albumin-coagulating power. Thus far, it has been mostly used in solutions of from one and a half to two per cent. 2. Even in stronger solutions, it has hardly any tendency to set up inflammation, and no caustic properties, so that it is particularly suitable for use in the treatment of acute gonorrhœa in men, whether affecting the penile or the deep urethra, and of gonorrhœa of either the urethra or the uterus in women. 3. It seems destitute of astringent properties, and on that account purely anticatarrhal treatment should accompany its use.

The Ætiology and Treatment of Chronic Enlargements of Lymphatic Glands, with Special Reference to those of the Neck.—The *Glasgow Medical Journal* for January contains an article on this subject by Mr. James H. Nicoll, of the Royal Hospital for Sick Children. If there is one fact, he says, which becomes more apparent than others in a study of the affections of lymph glands, it is the rarity of the occurrence of primary disease in such glands.

Acute or pyogenic enlargement (whether progressing to actual suppuration or ending in resolution) is invariably due to some pyogenic lesion in the peripheral area draining into the glands affected. So well recognized is this that the statement may be said to be accepted as a surgical axiom.

In regard to the various chronic enlargements, opinion is not so unanimous. One group, comparatively a very small one—viz., the *lymphadenoma* group (including both the leucæmic and non-leucæmic forms)—is possibly an example of primary disease of lymph glands, and the cases of so-called *lymphosarcoma* recorded from time to time may or may not constitute yet another small primary group, or prove merely members of the lymphadenoma group.

Two other groups are clearly secondary—viz., *carcinomatous* glands to cancer in the periphery, and *syphilitic* glands to chancre, secondary eruptions, and inflammations of skin and mucous membrane, and gummatous swellings and ulcers in various parts of the peripheral area.

Two groups of cases of chronic enlargements remain. These are *simple* chronic enlargement on the one hand, and *tuberculous* glands on the other. How far these two groups overlap, he says, is an open question. There can be no doubt that there occur gland enlargements persisting for months without marked change, directly dependent on chronic affections in the periphery, such as chronic eczema or prurigo, and disappearing when the peripheral affection has ceased, and not till then, and disappearing ultimately without having shown any tendency to either acute suppuration or tuberculous invasion. On the other hand, cases every now and then occur in which glands, the seat of a chronic enlargement apparently simple, ultimately become the seat of an enlargement clearly tuberculous. To all intents, however, the latter are members of the tuberculous group.

The author's special purpose is the consideration of the group of tuberculous enlargements of glands, frequently still called scrofulous or strumous enlargements. This group is by far the largest of all the groups of chronic enlargements of glands, and of the cases of it met in surgical practice ninety-six per cent. occur in the neck.

During the author's earlier investigations the conclusion became unavoidable that the only cases of possibly primary disease of the lymphatic glands were the comparatively rare cases of lymphadenoma and lymphosarcoma. These, therefore, were excluded. Next, he says, of the cases of secondary disease, the two groups of cancerous glands and of syphilitic glands were excluded as being easy of diagnosis and definitely secondary to some obvious lesion in the periphery. There remained a large number of cases of glandular swellings in the neck of various characters, but with one feature in common—namely, a tendency to soften or suppurate. In investigating a series of nearly five hundred cases, says Dr. Nicoll, the following conclusions were reached: 1. Decayed teeth do not give rise to disease in lymph glands. Caries of the teeth no more affects the glands of the neck than caries of the carpus or tarsus affects the glands of the axilla or of the groin. Both pyogenic and tuberculous disease of the teeth and alveoli present as swellings in close connection with the jaw and its periosteum, often with caries or necrosis of the jaw. These swellings leave sinuses discharging either pus or tuberculous *débris* through which the probe frequently detects bare bone. But the glands are only rarely affected, and in the few cases in which they are the affection seems to be secondary, not to the disease in the teeth, but to the sinus, or to some deep ulceration of the gum around the tooth. Just as in cases of disease of lymph glands secondary to caries of the limb bones, it is found that enlargement of the glands occurs after the subcutaneous tissue is the seat of abscess or sinus over the carious bone. When glands are infected in this way from tooth disease, the glandular enlargement appears primarily in the submaxillary lymph glands, not in the deep carotid glands.

2. Skin eruptions of the face and the scalp, like skin eruptions of the trunk and the limbs, readily affect lymph glands secondarily, but the affection of the glands is a strictly pyogenic one, and in no sense tuberculous or strumous. Impetigo, boils, and eczema of the face and the scalp, inflamma-

tory conditions of the scalp due to the scratching induced by pediculi, and wounds of the scalp and the face all readily affect the lymph glands of the neck, but three facts are very clear in regard to these affections: They tend to run a more or less acute and suppurative course, and disappear at once, and only when the peripheral disease is cured. They yield pus or pyogenic cocci only—not tubercle bacilli. The glands primarily affected are the *superficial* glands of the suboccipital, parotid, and submaxillary regions, though, later on, extension to the superficial glands along the external jugular vein and in the posterior triangle may occur, and, of course, ultimately, in many cases, extension to the deep glands.

The fact that many glands of this class, says the author —*i. e.*, secondary in their enlargement to the occurrence of the skin affections named—do not run a typical acutely suppurative course does not invalidate this statement. Pyogenic affections of glands, like pyogenic affections of other tissues, not infrequently resolve without suppuration, in not a few cases after running a more or less prolonged subacute or even chronic course.

3. Thrush, aphthous stomatitis, and gingivitis do not appear to have any great tendency to affect the lymphatic glands, though on this point, he says, he speaks with some reserve, knowing that it is only in family practice or, possibly, on the medical side of a children's hospital that these affections can be adequately observed. In only one case of adenitis, apparently secondary to aphthous ulcers in the mouth, has he been able to make an examination, and in this case the glandular abscess yielded a culture of cocci only.

4. Acute follicular or suppurative amygdalitis and acute phlegmonous pharyngitis would seem readily to affect the deep lymphatic glands along the carotid sheath. The affection of the glands in these cases is acutely suppurative and very apt to perforate the gland capsules and extend a long way in the connective tissue, giving rise, in a number of cases, to the serious condition known as Ludwig's angina.

It will be observed, says the author, that all the foregoing peripheral affections which secondarily involve glands with any frequency produce in the glands a more or less acute suppurative inflammation, and not a tuberculous or strumous affection. It has been found, however, that cases of pyogenic glandular affections, while numerous enough, are outnumbered in the proportion of five to one by cases of glandular enlargement which do not show evidence of a pyogenic nature, but present the characters of the classical chronic scrofulous glands, which in many instances ultimately become clearly tuberculous.

The conclusions arrived at, says Mr. Nicoll, in regard to these chronic enlargements of glands are as follows: 1. They occur, in the first instance at least, in one group only—namely, the group of glands along the upper part of the carotid sheath, chiefly in the region of the bifurcation of the artery, although the mischief may subsequently extend to neighboring glands. This statement embodies a rule which has three notable exceptions—namely, the occurrence of clearly tuberculous mischief in the superficial submaxillary and submental glands, in the superficial parotid glands, and in the preauricular gland. 2. In dissecting out these glands it is frequently found that the deepest glands of the group are to the mesial side, or to the posterior side, of the carotid sheath—that is, the deepest glands involved are the post-pharyngeal. It need hardly be mentioned, says the author, that these deep carotid and prevertebral glands are the glands to which the lymphatic vessels of the pharynx run. 3. Fully seventy per cent. of such enlargements are bilateral, both sides of the neck being, sooner or later, affected. 4. In the earlier stages of these glandular swellings in a certain number of cases the statement is made by the patient, or his parents, that the glands come and go, always reappearing or increasing when the patient's health is down. It is not difficult to ascertain, in many instances, that this depression of the health means that the patient has caught cold—that is to say, that the increase or reappearance of the glandular swelling is due to an attack or an aggravation of nasopharyngeal catarrh. (The foregoing statements, says Mr. Nicoll, with what follows, apply to such chronic enlargements as are included in the old term scrofulous only. Cancerous glands, syphilitic glands, lymphadenomatous glands, and affections of the deep glands, secondary to affections of the superficial glands, have been specifically excluded.)

These four facts seem to clearly indicate that the source of the peripheral mischief is in the nasopharyngeal mucous membrane. It appeared probable that repeated nasopharyngeal catarrhs induced a chronic *simple* inflammatory enlargement of the neck glands, which increased and decreased with recurrences and disappearances of the catarrh; and that, while in a certain number of the cases the enlargement of the glands ultimately completely disappeared, in a larger number, where there was a predisposition to tubercle (scrofulous diathesis), the tubercle bacillus found in these glands damaged by recurrent chronic inflammatory attacks a nidus suited for its development, the result being tuberculous disease of the glands. This view, says Mr. Nicoll, has been put forward by many writers on the subject.

The treatment has been carried out in a large number of cases during the past four years. The following are the main points:

In cases of *unilateral* tuberculous glands, or of chronically diseased glands likely to prove tuberculous, the primary lesion may be chronic (tubercular?) affections of the eye (chronic conjunctivitis, corneal ulcers, etc.), in which case the affection of the preauricular gland (situated on the cheek just in front of the tragus), in addition to that of the glands of the neck, will often clearly indicate the source of mischief; chronic otitis, usually evidenced by otorrhœa, perforation of the membrane, and deafness.

Cases of unilateral tuberculous disease are, however, much less common than cases of bilateral disease. In cases of disease in eye or ear appropriate treatment must be adopted. In the case of unilateral enlarged glands due to nasopharyngeal mischief the latter is treated as in cases of bilateral gland disease.

Cases of *bilateral* tuberculous glands, as already stated, have been found to constitute over seventy per cent. of the whole, and when to these are added the last-mentioned group of unilateral enlarged glands, the number of cases of tuberculous glands, or of glands which are likely to become tuberculous, secondary to a primary source in the nasopharynx, may be put at something over eighty per cent. of the whole.

In some cases disease in all three regions—those of the eye, ear, and pharynx—is present. In others, disease exists in two of the regions.

With regard to the treatment, says Mr. Nicoll, in all cases of bilateral chronic enlargement of glands of the neck, before excision of the glands is carried out, the tonsils are removed, the entire nasopharynx is scraped, and the mucous membrane of the lower turbinates is cauterized or painted with some strong caustic application. The treatment of the pharynx and the nostrils is, in many instances, repeated at intervals of a few weeks, both before and after excision of the glands. The tonsils are removed whether they are enlarged or not, being excised, when too small for the guillotine, by the use of

a probe-pointed knife or curved scissors. The nostrils and the nasopharynx are treated whether any obvious adenoids or turbinate hypertrophy is found or not, although in most cases some degree of enlargement of the tonsils, adenoid tissues, and turbinate mucous membrane is present, giving rise to the typical oral breathing, nasal discharge, altered voice, and deafness. In some of the worst cases there are ulceration of the nasopharynx, caries of the ethmoid, and ozæna. In the Children's Hospital Dispensary, says the author, the two operations are frequently combined to economize time—that is, the glands are excised and the nasopharynx is treated at the same time. The glands are removed, and a temporary dressing is applied to the wounds in the neck. A towel is tightly pinned around the patient's forehead and occiput to protect the hair from blood. The head is dropped over the end of the table, the patient being on his back, and the chloroform withdrawn. The operator, having a leather guard on his forefinger, opens the patient's mouth with a gag, which is then held by an assistant, while the operator excises the tonsils, and then scrapes the whole nasopharyngeal wall. Finally, when the hæmorrhage has partly ceased, the turbinates are painted over with a strong solution of chromic acid. This combination of the two operations, says the author, prevents the necessity of a second administration of the anæsthetic, although it may lead to some risk, as in two cases the author saw suppuration in the neck wounds, apparently due to the conveyance of sepsis along the lymphatic vessels from the raw surface created in the nasopharynx. This risk, however, may be avoided by ablating the nasopharyngeal lymphoid tissues two or three weeks earlier than the glands.

In all cases the glands are carefully dissected out, for when the process has once started in a gland it is certain to go on for some time, independently of fresh peripheral provocation, and, further, it has the tendency to invade neighboring glands. The object of the treatment of the peripheral region is less to benefit the glands already really tuberculous than to prevent involvement of fresh glands and consequent recurrence of the trouble in the neck.

Treatment of the general health is carried out on the usual lines. The rule that tuberculous enlargement of the neck glands occurs, in the first instance at least, in the deep glands on the upper part of the carotid sheath has three exceptions. One of these, the enlargement of the preauricular gland, has been referred to. A second is the affection of the glands in the submaxillary and submental regions. These glands lie comparatively superficially, and it will be found that their tuberculous affection is due to chronic fissures, sores, and inflammations of the orifices of the nostrils, of the free margin of the upper lip, and, less often, of the angles of the mouth—all of which are the direct results of the chronic discharges trickling from the nostrils. These discharges are due to the unhealthy condition of the mucous membranes referred to, and the results are seen for some time after in the thick furrowed upper lip (the strumous lip), and in the smooth, hairless, cicatricial-looking nostril orifices, as well as in the tuberculous glands below the chin and jaw. That the tuberculous disease of these glands is directly due to these affections of the nostrils and lip, says Mr. Nicoll, is occasionally strikingly demonstrated by the occurrence of an area of subcutaneous tubercle under the skin of the cheek in front of the anterior edge of the masseter and below the level of the angle of the mouth. This area is felt as a firm patch, which first reddens the overlying skin and finally breaks through it, forming a typical tuberculous ulcer. Its significance in the present connection is in the fact that it originates in the area of the junction of the lymph vessels from the nostril, the lip, and the angle of the mouth with the line of lymph vessels accompanying the facial vein, which lymphatics end in the submaxillary glands. The remaining exception to the rule stated above is the occurrence of tuberculous disease in the superficial glands of the parotid region. This will be found to be due to excoriation and inflammation of the external auditory meatus and auricle caused by the flow of the discharge of chronic otorrhœa.

These affections of the nostrils, lip, and auricle, if persisting after the removal of the discharges, are treated by the application of an ointment containing mercury, salicylic acid, or iodoform. It is, of course, evident, says the author, that the nose, pharynx, tonsils, Eustachian tubes, middle ears, lacrymal ducts, and conjunctivæ form one area of mucous and lymphoid tissues.

Of the fact that the treatment described is the most satisfactory for the cases to which it has been applied, the author states that he has now no doubt.

Photography as an Aid to Deaf-mutes.—The *Wiener medizinische Blätter* for December 26th announces that Dr. Gutzmann has succeeded in photographing articulate speech, so to speak—that is to say, the movements of the lower jaw and the soft parts—in a way calculated to be useful to deaf-mutes. He has found it best to take side views. It seems that the lower jaw moves downward in the enunciation of *a* (our *ah?*), forward in that of *s* (whether initial, equivalent to our *z*, or terminal, our hard *s*, is not stated), and *sch* (our *sh*), backward in that of *f*, *w* (our *v*), and *v* (our *f*), and upward in that of *d*, *t*, and *n*. The lips and cheeks move forward in the articulation of *o* and *u* (our *oo*), and backward in that of *e* (our long *a*) and *i* (our long *e*). The floor of the mouth, so far as its behavior is visible in the soft parts beneath the lower jaw, moves downward in the articulation of *l* and upward in that of *k* and *g*. By means of eighteen types based on these movements Gutzmann has been able to represent a succession of words. It is stated that by arranging these types properly in a stroboscope one may easily recognize the words they represent. Such a device, it is thought, will prove of material aid to the deaf and dumb in learning to understand spoken words by watching the speaker's articulation. This is said to be much easier when the speaker is viewed from the side than when he is observed face to face.

Pirogof in the Crimean War.—"The anniversary of the death of the great Russian surgeon, Pirogof," says the St. Petersburg correspondent of the *British Medical Journal*, "was kept by a commemorative meeting, held in the hall of the Red Cross Society, of the four principal medical societies in St. Petersburg, the Pirogof Surgical Society leading the way. The announcement was made that, in addition to the prizes already instituted in the name of Pirogof, a new set, consisting of gold medals, will be offered for the best works upon some surgical subject. The movement is opportune to recall some of the events which were happening just forty years ago, and the part which Pirogof played in the Crimean war. He was ordered to Sevastopol in October, 1854, and remained there all that winter, and until the following June, in full charge of the principal military hospitals on the north side of the harbor.

"The maladministration, disorder, and disgraceful abuses which he found prevailing everywhere seem to have deeply affected him, and in June he returned to St. Petersburg with the object of representing to the central authorities the crying needs for improvement and reform. In this he was unsuccessful, and after a short stay in the capital he was ordered back to the seat of war. He was permitted to take with him a certain number of young surgeons of his own choosing, and

among these was the late Professor Botkin, who had then but recently qualified. By the time they arrived in Sevastopol the south side of the harbor had already been taken, and the hospitals of the northern side were full to overflowing with sick and wounded. From September to December, 1855, Pirogof was in Simpheropol; thence he was ordered to visit and inspect the hospitals, about seventy in number, in Perekop, Kherson, Ekaterinoslav, Kharkof, and other towns. He found the hospitals crammed with patients, some wounded, others ill with typhus or typhoid fever or diphtheria, and a large proportion suffering from frozen limbs, for they had been brought from the seat of war in open sledges, with the thermometer a dozen or more degrees below zero Fahrenheit. 'This frightful time,' Pirogof himself wrote, 'I shall never forget to the end of my life.' He instituted important reforms.

"Among these was the introduction of female nurses into field hospitals. Primarily the honor of introducing this great reform in Russia is due to the Grand Duchess Helena Pavlovna, the sister of the Emperor Nicholas. The Emperor himself, ever averse to innovations, was skeptical as to the possibility of women nurses being sent to the actual theatre of war, but he yielded to his sister's entreaties, and allowed the experiment to be tried. The Grand Duchess turned to Pirogof to aid her in carrying it out. At that time the employment of women as nurses was scarcely known, even in civil hospitals, and the new proposal had to overcome many prejudices and much inertia. The Grand Duchess herself set an example by bandaging with her own hands a patient who had been operated upon in Pirogof's clinic; after that the prejudice rapidly disappeared, and many women came forward and offered their services as Sisters of Mercy. Pirogof himself at first scarcely knew how to regard the innovation. He had only seen the employment of women as nurses in the Paris hospitals, and had no practical acquaintance with such a system. In his own words, it was 'more by instinct than from experience' that he was convinced of the great boon their services would be in nursing the sick both in war and peace. It is from the time of the Crimean war that the general employment of women nurses in Russian hospitals dates."

The World's Congress of Medico-climatology will hold a national meeting in San Antonio, Texas, on February 20th, 21st, and 22d. This congress was organized in Chicago in 1893, for the purpose of making a thorough, careful, scientific, and systematic classification of the climates and health resorts of the world, and particularly of the United States, with regard to their therapeutic value in all forms of disease; also of examining into the merits of mineral waters and properly classifying them. This work is to be done under the auspices and direction of the medical profession through regularly organized societies acting in co-operation with the congress. A national meeting will be held every year and an international meeting every five years. A printed copy of the constitution and by-laws, with other matter relating to the congress, may be had upon application to the secretary, Dr. W. S. Rowley, Menger Hotel, San Antonio, Texas.

The New York Academy of Medicine.—At the stated meeting of Thursday evening, January 16th, the order was as follows: The Bacteriology of Empyema in Children, by Dr. Henry Koplik; The Diagnosis and Peculiarities of Pyothorax in Children, by Dr. August Caillé; and The Treatment of Empyema in Children, by Dr. Joseph E. Winters.

At the next meeting of the Section in Ophthalmology and Otology, on Monday evening, the 20th inst., the following papers will be read: On the Treatment of Acute Purulent Otitis Media with Mastoid and Intracranial Involvements, by Dr. Herman Knapp; Papilloma of the Conjunctiva and Cornea, by Dr. J. E. Weeks; and Acquired Amblyopia, by Dr. M. L. Foster. Dr. M. Topelitz will present a case of epidural abscess due to acute otitis suppurativa.

At the next meeting of the Section in General Medicine, on Tuesday evening, the 21st inst., the subject of The Theory and Treatment of Rheumatism will be discussed by Dr. W. H. Draper, Dr. Beverley Robinson, Dr. F. P. Kinnicutt, Dr. Robert W. Taylor, and others.

At the next meeting of the Section in Laryngology, on Wednesday evening, the 22d inst., Dr. Clarence C. Rice will read a paper entitled How may Ulcerations on the Nasal Sæptum following Operation, and in Atrophic Rhinitis, best be Healed to Secure an Even, Moist Surface? Cases will be presented, and new instruments and apparatus exhibited.

At the next meeting of the Section in Obstetrics and Gynæcology (no date given in the announcement) Dr. Edward A. Ayers will read a paper entitled Symphysiotomy, its After-effects, with a Description of a New Method. Cases will be reported and specimens exhibited.

An American Parable of the Blacksmith and the Physician.—Under this heading the *Indian Medical Record* says: "A certain man was hanged, and he died, and he left two sons, honest men. Now, one of these sons was a blacksmith; but the other became a physician. And after their father had been taken from them, these brothers made their homes in other lands. And the blacksmith would have prospered, but it befell that some one asked him how his father died. And the blacksmith, looking angrily upon him, answered: 'He was hung.' For the blacksmith was an honest man. Howbeit presently, when a horse was missing, men gathered and seized and hanged the blacksmith, saying: 'This man must take after his father.' So the blacksmith did *take* after his father. And, at the same time, in his own city, one inquired of the physician by what means his father died. And the physician covered his face and wept. But while he wept, he considered, saying within himself: 'If I say he was hanged, then shall I shock this man, and give him pain. Nevertheless I must tell the truth.' He said, therefore: 'My father died of heart failure.' And again he wept, the questioner weeping with him. Then this being told, men said: 'Doubtless, since his father died of heart failure this good physician and loving son hath made a study of kindred diseases.' So they resorted unto him. And the physician became a specialist, and he looked at them who came in and coughed once and sneezed twice, and demanded $100. And they gave gladly. For the physician was an honest man."

Abscess of the Uterus.—At a recent meeting of the Paris Obstetrical and Gynæcological Society, a report of which appears in the *Gazette médicale de Paris* for December 28th, M. Pichevin stated that he had practised vaginal hysterectomy in the case of a woman who, for three years, had had a discharge of pus from the vagina. An examination had shown that the uterus contained a prominent mass which had developed at the expense of the left cornu.

On cutting into this tumor M. Pichevin had found a cavity containing a certain quantity of pus. This cavity was shaggy, irregular, and of a grayish aspect; its walls, which were formed entirely by the uterine tissue, were blended with the rest of the parenchyma.

Professor Virchow.—It is announced that Professor Rudolf Virchow has been made a commander of the French Legion of Honor.

Original Communications.

LOCAL PERITONITIS.

(SYNONYMS—MECHANICAL, PLASTIC, RESIDUAL, INTERSTITIAL, IRRITATIVE, AND INFECTIVE.)

WITH A NEW THEORY.

BY BYRON ROBINSON, B. S., M. D.,
CHICAGO,
PROFESSOR OF GYNÆCOLOGY IN THE POST-GRADUATE SCHOOL.

Location.—1. On the psoæ and crura diaphragmatica muscles. 2. At the bowel flexures. 3. At the ligamentum phrenico-colicum dextrum. 4. In the lesser omental cavity. 5. At the point where the colon crosses the transverse portion of the duodenum. 6. At the hernial orifices. 7. In the omentum. 8. In accidental localities. (9. At the ends of the Falloppian tubes.)

Ætiology.—Infection passing through the bowel wall induced by (*a*) action of the psoæ and crura diaphragmatica muscles on the bowel possessing pathogenic contents; (*b*) mechanical abrasions of the mucosa at bowel flexures by sharp and rough foreign bodies as they pass around the bowel angles; (*c*) the endothelia of the peritonæum may be abraded traumatically and the resulting healing be cicatricial; (*d*) in general motion and pressure.

In this article I wish to present some views of local peritonitis gained by observation of the abdominal viscera in two hundred and fifty autopsies, one hundred and seventy of which were carefully recorded for the purpose of studying the anatomy and pathology of the peritonæum. Some of the views are, so far as I am aware, new, and hence will probably be received with skepticism. However, the best argument for or against the views will be to perform a similar number of autopsies and report results. As the union of the mucosa of the Falloppian tubes and peritonæum is unique in the economy, the explanation of local peritonitis at their fimbriated ends must be unique and exclusive.

The earliest systematic account of local peritonitis at command is that of Professor Virchow, in his own *Archiv*, in 1853. Forty-two years have passed since Virchow penned that excellent article, but I have not seen any other writings which add to the subject anything except the word infection. Hodgkin gave a partial systematic account of local peritonitis in 1836, but he entirely omitted meso-sigmoiditis and some other significant forms. Local peritonitis has received the attention of many noted writers, as Rokitansky, Virchow, Waldeyer, Treitz, Treves, Langer, Toldt, and many others. However, none have treated it or assigned it to special causes as is done in this paper. If one opens a spare cadaver by a long, crucial incision it will be apparent that in the abdomen there exist relatively fixed organs and those which are very movable. In other words there are abdominal organs which have peritoneal supports so short that they can not yield much nor glide away from opposing forces, while others have such long peritoneal supports that they can be drawn through all hernial orifices, artificially produced for the purpose, without tearing the supports. I have found this so in ninety-seven cases out of a hundred. By examining the fixed organs one finds at definite points on them local peritonitic adhesions, quite constantly in adults, but not in infants or young children. In short, the constancy of local peritonitis, shown by adhesions, increases steadily with age so far as my recorded examinations of a hundred and seventy cases of adults and infants show. One has only to perform a score of post-mortems to be impressed with the fact that peritonitic adhesions are singularly frequent in the two hypochondriac regions, and also in the regions of the two iliac fossæ. To be specific, peritonitic adhesions are very frequent around the gall bladder and spleen; also in the meso-sigmoid and appendiculo-cæcal region—*i. e.*, over the psoæ muscles. Pelvic peritonitis is not confined to women. In men it arises from the semen sacs (gonorrhœal). Of course the abdominal surgeon of experience knows that the three great regions of peritonitis are the pelvic, appendicular, and gall-bladder regions, where abdominal surgery has experienced its brilliant successes and its dismal failures. But in autopsies one can easily see from the varied kind and degree of adhesions in these three localities that the ætiology and results of peritonitis must vary.

It is the object of this article to attempt to analyze the cause of local peritonitis, based on the examination of two hundred and fifty autopsies. One hundred of these subjects I dissected and have no written records. Twenty were infants and showed no local peritonitis. One hundred and fifty autopsies of adults were performed in Cook County Hospital without selection and carefully recorded, which statistics serve as a base for the paper. I was enabled to make the observation on the abdominal viscera through the courtesy of Dr. Hektoen, Dr. Le Count, Dr. Edwards, and Dr. Mitchell, the pathologists, and also by the kindness of the internes during the past two years.

We may first observe that the partial peritonitis of which we here speak occurs chiefly in the peritonæum which covers the dorsal region. A slight exception sometimes occurs between the liver and diaphragm and the spleen and diaphragm, but this is perhaps more apparent than real, as the infection which produced the peritonitis in the vast majority of cases passes out of the colonic flexures or the duodenal flexure. It is a rule that local peritonitis occurs, then, more at the roots of the peritoneal supports. Few peritoneal adhesions are found on the interior abdominal wall unless it be a definitely traceable course. Two questions may here be asked: 1. How does local peritonitis arise? 2. What is its effect?

Virchow states that local peritonitis arises from mechanical causes acting from without and within the gut lumen; also from chemical action on the digestive mucosa. To this view, though asserted by the loftiest mental phenomenon of the century, I can only partially agree. Local peritonitis, so far as I can understand it, is due to mechanical action only as a factor, a step in the process, while the vital factor is the transmission of pathogenic microbes as a result of the mechanical trauma through the bowel wall to the peritonæum. The mechanical action or trauma

first may act from within the lumen of the gut wall at any point, but especially at the flexures. The flexures of the large bowel are the most liable to trauma from within the lumen, for the reason that its angles are fixed, and also that the fæces are harder and drier, and contain sharp, rough, foreign bodies, which in passing around the bowel angle wound or abrade the mucosa, which produces all the necessary conditions to allow pathogenic microbes or their products to pass through the gut wall to the peritonæum. Besides, microbes which are not pathogenic to the mucosa may be pathogenic to the peritonæum. The mechanical action or trauma from without the digestive tract is what I especially call attention to in the production of local peritonitis. The mechanical action in this case is muscular (the psoæ and crura diaphragmatica). Now, muscular action itself does not produce peritonitis. But the muscular action is a factor, as when the muscle plays with its longest range of action against a bowel wall whose lumen is filled with pathogenic microbes, the trauma induces the invasion of the germs or their products through the bowel. What I mean by mechanical action or trauma in the production of local peritonitis is, then, abrasion of the mucosa within the bowel lumen and without the bowel, the play of muscular action against the bowel containing pathogenic microbes. Farther on I shall show that the muscles concerned in this production of the local peritonitis are the psoæ (and slightly the iliaci) and the crura diaphragmatica.

Again, what Virchow designates as chemical decomposition within the bowel, producing local peritonitis, I shall displace entirely and substitute for it pathogenic microbes or their products. Local peritonitis, then, has two steps: (*a*) trauma, (*b*) infectious invasion. Can one trace the infective process which produces local peritonitis from the mucosa to the peritonæum? Sometimes one can trace it macroscopically to the mucosa. I have done this in cases of foreign bodies in the appendix or in the bowel, but such are gross cases. In the majority of cases of local peritonitis occurring over the psoæ and crura diaphragmatica and bowel flexures, no trace of infection process can be seen below the peritonæum—*i. e.*, no lesion can be found in the mucosa or muscularis immediately subjacent to the peritoneal adhesions. In the language of Virchow: "Wir können nur sagen dass die Veränderung insbesondere die Submucosa und Muscularis zuweilen so unbedeutend erscheint dass man sie nicht mit Sicherheit als das Verbindungsglied einer relativ ausgedehnten und bedeutenden Peritonitis betrachten kann." (We can only say that the change in the submucosa and muscularis especially often appears so insignificant that one can not with certainty demonstrate the connection between these subjacent layers and a distinct peritonitis.) In other words, one can not demonstrate the invasion of the infective process through each layer of tissue from the mucosa to the peritonæum. The infectious agent producing the local peritonitis and the mucosa abrasion allowing the invasion may have long since passed away, leaving only peritoneal adhesions to tell the tale. It must be admitted that the peritonæum may be inflamed without the muscularis or mucosa being involved, or the muscularis, and especially the mucosa, may be diseased and the peritonæum show no trace of pathology. I can not here enter into the discussion of local peritonitis from ulceration of the mucosa—*e. g.*, typhoid, tuberculous, etc.

What is the effect of local peritonitis or adhesions? The answer is pain, malnutrition, and dislocation of viscera. Any movable viscus is displaced when it is abnormally fixed. Of course, peritoneal adhesions around a fixed viscus do not produce very much pain in general, as we will easily be able to demonstrate. Still, some dragging and aching pain and consequent malnutrition with neuroses may result. But pain from local peritonitis or adhesions plays an evil rôle, especially in movable organs possessed of a high peristalsis, as, for example, the fixing of the bladder, small intestines, sigmoid, transverse colon, or Falloppian tube. Many times the cæcum and liver (both relatively fixed organs) were found almost buried in adhesions, but no complaint ever reached the physician's ear. Adhesions, fixing very movable organs, produce very much pain. The chief pathogenic cause in producing local peritonitis or adhesions demanding subsequent laparotomy is the infection passing periodically out of the cut ends of the Falloppian tubes, which fixes the highly movable and peristaltic viscera, the small intestines and sigmoid. I have reoperated seven times for this condition, each time benefiting the patient. But the rhythm of the cæcum and liver is so limited that adhesions do not hamper them as they would the bladder, sigmoid, small intestines, and Falloppian tubes with their wide range of peristalsis and motion. Hence the effect of adhesions on a viscus depends on the amount of fixation it produces relative to its mobility. I have seen adhesions from local peritonitis produce all manner of kinks, bends, and whirls of intestinal coils, and I have never seen intestinal obstruction from this cause, though no doubt bands will occasionally appear.

The effects of adhesions from local peritonitis are pain, dislocation of viscera, malnutrition, and finally neurosis. This form of peritonitis is definitely limited, in contradistinction to any form which may become general or suppurative or tubercular. It might be designated as peritonitis chronica, flexuræ coli or omentalis. I do not refer especially to the fibrous thickening of the great omentum, which is a slow inflammatory process known as omentitis chronica fibrosa. This may be local, however, and lead to cicatricial contraction known as omentitis fibrosa retrahens. In many cases one finds wide bands with the intestines incarcerated in the pathological pouches; one can note the omentum rolled up and lying above or below the transverse colon. Sometimes it forms a division by its adhesions between the hypogastric and epigastric regions, thus making a kind of diaphragm, and, no doubt, circumscribes gall-bladder ruptures. The omentum is rolled up into a string and lies in a slanting position across the body. But generally the local peritonitis around the spleen drags the omentum so that it tends to the left. This peritonitis chronica begins with an exudate which later becomes organized and fibrous. Soon nerves and vessels become formed and connective tissue of a loose consistence arises which by continuous contraction results in a hard, white, callous, glistening cicatrix. Yet some of the exudates so form that large

areas of new tissue come into existence which resembles and acts almost like the old peritonæum, and since the peritoneal endothelium is simply modified connective tissue it is not strange that new connective tissue under constant friction smooths itself down to surface endothelium. As the exudates become organized at the various points and contract, the peculiar characteristic of what is termed peritonitis chronica can be observed in the autopsy of most subjects. In case of extensive peritonitis—as, *e. g.*, around the gall bladder or in cases of double colon and so forth—the steady, continuous contraction progresses and the kinking, constrictions, axial rotations, changing of visceral positions, and irregular draggings of various viscera simply increase with the years and occasionally reach a high grade, as was noticed in several of the autopsies.

In general, this limited, partial peritonitis to which we confine our remarks is a very important disease to commend to the attention of physicians and surgeons. It will definitely show that simple adhesions are insufficient to institute surgical proceedings, for in a hundred and fifty carefully recorded autopsies I found seventy-two per cent. of adhesions in the cæco-appendicular regions of subjects which died of other than disease of this region, so that the proposition which I have insisted on for some time, that three fourths of the subjects of appendicitis will recover without operation, is here borne out. Now, this local peritonitis may occur at any point in the abdominal cavity, yet the autopsies show that it has quite constant places of predilection. It has a special predilection for the appendiculo-cæcal region (which includes the lower end of the mesenterium), in the gall-bladder region, on the left side of the meso-sigmoid, at the flexura coli, where the right colon crosses the transverse portion of the duodenum and the pelvis. In short, its chief location is the dorsal wall or seat of the peritoneal supports. Its chief points of location are the psoæ and crura diaphragmatica muscles and the flexures of the digestive tract. Its ætiology lies almost entirely in the transmission of infection from the digestive mucosa to the peritonæum. This local peritonitis forms on the surface of the peritonæum flat, fibrous layers of exudates which cover larger or smaller areas and do not very frequently produce adhesions of several viscera, as the exudates arise slowly and the peristalsis or visceral motion tends to relieve the organs from fixation. The exudates progress to connective-tissue formation. Like other new formations, it soon becomes smaller in volume by steady but irregular contraction, which results in a whitish cicatrix of a linear or star shape. The hard cicatrix can be felt elevated above the surface. By its contraction it disarranges the adjacent viscera from its appropriating their peritoneal covering. It is common to see cicatrices in the mesentery at its lower end (peritonitis mesenterialis), which shortens the mesentery into a hard, white, stiff support (dislocates the small intestines). Its most decided effect is observed in the left side of the meso-sigmoid, where it shortens the meso-sigmoid and compromises the lumen of sigmoid very irregularly, producing in the sigmoid dilatations and contractions, and by this very means making the adhesions in the meso-sigmoid progressive forever by creating a lumen in the sigmoid which from its irregularity is being continually abraded in the mucosa from hard, rough foreign bodies, thus inducing microbic invasion. Local peritonitis occurs most frequently at the fixed bends or flexures of the digestive tract—*i. e.*, at points where the fæcal current is slowed—and the adhesions are the most extensive, constant, and dense where the slowed fæcal current is the hardest and driest. It may be easily observed that local peritonitis arises at flexures, for if the normal flexures are erased the adhesions fail to arise at the usual locations; and again, if by congenital or acquired peritonitis new flexures arise, local peritonitis will arise at such bowel bends. We will now take up local peritonitis and discuss it systematically or in detail.

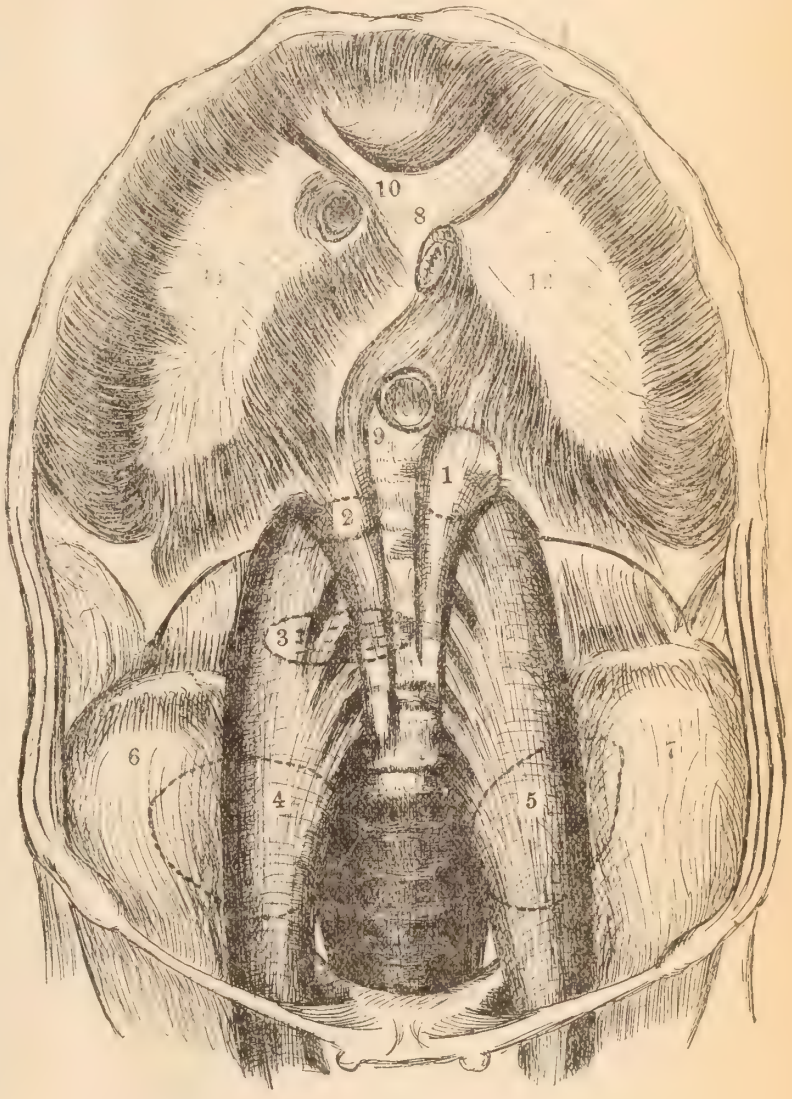


Fig. 1.

Fig. 1 is a sketch drawn to illustrate local peritonitis over the longest range of action of the psoæ, diaphragmatica, and iliac muscles. No. 1 lies in a dotted line over the left crust of the diaphragm, and its local peritonitis is associated with the middle and left end of the lesser omental sac (bursa omentalis minoris)—*i. e.*, at and adjacent to the ligamentum gastro-pancreaticum and the spleen. No. 2 indicates with its oval dotted line where the duodenum surmounted by the flexura coli hepatis crosses the right crus of the diaphragm. Its local peritonitis is associated with that of the right end of the lesser omental cavity and the gall-bladder region. No. 3, with its elliptical dotted line, indicates two points of local peritonitis—viz., (*a*) where the transverse portion of the duodenum surmounted by the ascending colon passes over the psoas and diaphragmatic muscles. It is at the point where Haller's omentum generally terminates and the anterior concavity of the ascending colon exists. (*b*) In the ligamentum phrenico-colicum dextrum induced by the trauma of the right lower lobe of the liver. Nos. 4 and 5 indicate, with their dotted rings, the local peritonitis at the highest range of action of the psoæ and iliac muscles—*i. e.*, around the appendiculo-cæcal apparatus and in the meso-sigmoid. Nos. 6 and 7, iliac muscles; Nos. 11 and 12, central tendon of diaphragm; No. 8, œsophagus; No. 9, aorta; and No. 10, vena cava.

I. *Local Peritonitis in the Gastro-colic Omentum (peritonitis omentalis).*—In 1844 the brainy Huschke said the physiological signification of the great omentum was obscure. But I soon found Huschke was in error, in experimentation on dogs' viscera and in abdominal surgery. In my mind the omentum major is the great peritoneal protector—the man-of-war, ready at a moment's notice to protect the parts from peritoneal infectious invasion, and the surgeon's friend, burying the mischief his hands have wrought. The great omentum lies like a buoy or water bed between movable viscera and a movable abdominal wall. It can there fore yield and glide in all directions, and it is especially useful in preventing adhesions of bowel to the anterior abdominal wall. Local peritonitis occurs in the great omentum in two forms: (*a*) The first is where it becomes adherent around an infected focus, effectually circumscribing it. I have seen it close bullet holes and act as a gut wall. In a similar manner it is useful in circumscribing infectious invasions in the appendicular and pelvic region. I have found it attached to the wall of small intestines by local peritoneal adhesions, no doubt circumscribing infectious invasion from that gut lumen. It is common to find on its posterior or lower surface, or the surface which is turned toward the bowel, old white cicatrices. The cicatrices being on the lower surface of the great omentum demonstrate that the local peritonitic adhesions proceeded from the gut lumen. It is not infrequent to find the edge of the omentum adherent to the lateral parietes and no bowel close to it, but in that case the bowel was originally adherent with it and finally broke away by continued peristalsis. The local peritonitic adhesions are mostly found in connection with the transverse and vertical colons and pelvic region, much rarer with the small intestines. The omental cicatrices may appear on the upper surface of the omentum if bowel segments come in contact with it. Hernial orifices in the anterior and lateral abdominal parietal wall come in for a goodly share of omental adhesions. The cicatrices on the under or posterior surface of the omentum have a varied shape. Some are long and branched, others are more circumscribed and stellate in shape. All show contractions of a grayish-white, dense tissue—a new formation. (*b*) Another form of local peritonitis or omentitis is where the omentum is rolled up into a kind of cylindrical strand which lies parallel to the transverse colon. The omentum may be in a solid, hard roll and lie above or below the colon transversum. No doubt it is first rolled up and deposited above and behind the colon transversum by the filling and emptying of the colon with gas. The great omentum is very frequently attached to the anterior surface of the liver around the gall bladder, or, perhaps better, in the region of the flexura coli hepatis. Less frequently its border is attached to the spleen (flexura coli lienalis), and still less to the ileo-cæcal region, for I found that in one hundred cases the omentum covered the cæcum only eight times. Right here it may be observed that the cæcum and sigmoid are not frequently covered with the great omentum, because the frequent dilatation and contraction of the cæcum and sigmoid with gas gradually force the omentum toward the centre on the sacrum. Hence we will find the great omentum extending into the pelvis and fixed there by adhesions oftener than it is fixed either to the cæcum or the S romanum. So far as I am able to observe, the omentum became fixed into a roll lying transversely across the body by various periodical attacks of local peritonitis which owe their origin to infectious invasions through the wall of the transverse colon. Besides, the local peritonitis or adhesions of the omentum along the transverse colon are worse where the colon possesses the peculiar sharp loops or bends, and thus, as the dry, rough fæces pass around the angles of the transverse colon, the mucosa is abraded, allowing microbic invasion. It can thus be observed that adhesive omentitis occurs frequently at flexures of the colon, pelvis, and cæcum. The order of fixation of the omentum is chiefly the following:

(*a*) At the flexura coli hepatis (liver).
(*b*) At the flexura coli lienalis (spleen).
(*c*) In the pelvis (ends of the tubes).
(*d*) On the vertical colons.
(*e*) At the hernial orifices, and finally
(*f*) At the cæcum and sigmoid.

I do not here speak of tuberculous or malignant adhesions. In the omentum is the most typical place to observe that peritonitis is Nature's method of repair, and that it is infection that kills. The omentum is like a moving sentinel, whose beat extends over the whole peritonæum to guard the invasion of infectious foes. Its method of defense is to build forts of exudates, which not only act as barriers against the microbe hosts, but bury the slain of the battle, and starve the remaining ones within circumscribed prison walls.

A region of significant local peritonitis and frequent adhesions is that of the *spleen*. In one hundred and fifty subjects, one hundred and two had parasplenitis, or ninety

per cent.* It is rare to find a normal peritonæum around the spleen, except in adolescence or in infancy. So far as I am able to read, these numerous local peritoneal adhesions about the spleen have never been explained. However, it is my opinion from investigation that they have three sources—viz.: (*a*) the flexura coli lienalis, (*b*) through the stomach, (*c*) through the diaphragm. The flexura coli lienalis is the sharpest and most fixed flexure of the bowel, and, besides, the fæces are dry and hard, and contain sharp foreign bodies, which abrade the mucosa as it passes around the acute colonic bend. Also, the fæces progress slowly and tarry considerably at this bowel angle, allowing ample time for abrasion of the mucosa. The great curve of the stomach periodically moves against the spleen and diaphragm, and pathogenic germs which exist in the stomach are enabled by the subjected trauma to invade the stomach wall. Again, the spleen may frequently be found densely adherent to the diaphragm. I think this is due to invasion from the pleura. I have frequently noted that those subjects who die from pleuro-pneumonia have considerable peritonitis on the diaphragmatic serosa. The diaphragm is in constant motion, which not only aids infectious invasions from its pleural surface, but also from the colic flexure and stomachic curve. Abrasion of mucosa and muscular action of the diaphragm account for the pathogenic invasion and consequent peritoneal adhesions about the spleen. In regard to the white, platelike deposits (Rokitansky) of connective tissue on the spleen I will not discuss here. The hard, new-formed connective tissue is situated chiefly in its capsule, but seems to invade considerably the peritonitic lymphatics.

A similar kind of inflammatory deposit (probably lymphangeitis) exists at the base of the ligamentum coronarium hepatis and ligamentum suspensorium hepatis. This form of peritonitis spreads for about an inch each side of the base of the hepatic ligaments and is, no doubt, a peritoneal lymphangeitis. It may be mentioned that the left end of the lesser omentum shares in the peritoneal adhesions of the spleen. The last one hundred cases showed eighty-five per cent.

The Cæco-appendicular Region.—Turning our attention to the cæco-appendicular region in the right iliac fossa, we find another place where adhesions have predilection. In one hundred and fifty adult autopsies I have found adhesions, local peritonitis, in one hundred and eight subjects, seventy-two per cent. It may be stated that the standard of location of the cæcum and appendix is the psoas muscle. One of the three portions of the bowel will touch the psoas (or iliac) muscle. (*a*) The cæcum generally lies on the psoas or the psoas and iliac muscles; (*b*) the appendix generally touches one of these muscles; (*c*) when the cæcum and appendix are located a little higher than usual, the lower end of the ileum frequently passes across the muscle in contact with it in order to meet the descending cæcum. Now, in the subjects one or more of these three portions of the bowel lie in contact with the psoas (or iliac) muscle, and that portion of the bowel which lies in contact is the most liable to be surrounded with adhesions. In other words, if the cæcum, appendix, or lower end of the ileum lies in contact with the long range of action of the psoas muscle, peritoneal adhesions generally surround it. This could be frequently demonstrated in the autopsies; where the cæcum and appendix lay high up out of range of the psoas muscle, the ileum would occasionally run across the psoas, especially in its longest range of action, and would be surrounded with many adhesions. The interpretation of these adhesions, local peritonitis, appears to me to be the following:

When the gut contains virulent pathogenic germs the action of the psoas muscle on it acts like traumatism, and its vigorous motion induces pathogenic microbes to migrate through the bowel wall to the peritonæum, producing peritonitis. If the bowel contains no pathogenic microbes, then the range of action of the psoas muscle does not induce microbic invasion. Hence, the action of the psoas muscle is only a factor which is predisposed to act under the favorable condition of virulent microbes being in the bowel lumen. I do not state that muscular action produces peritonitis; but muscular action, if it produces motion in a bowel filled with pathogenic microbes, may induce migration of these germs through the bowel wall to the serous membrane. The pathogenic facts brought to light by these examinations is a significant matter in regard to operations for appendicitis. None of these subjects died of appendicitis, yet seventy-two per cent. of them had adhesions around the cæcum and appendix. Many surgeons say that if they find adhesions during the surgical procedure of removing the appendix the operation is justifiable, but these carefully recorded statistics of one hundred and fifty cases demonstrate that mere adhesions are not sufficient to justify an operation. It is well known that males suffer from appendicitis more than females. The statistics show that when the appendix lies within the range of action of the psoas muscle, it has much more local peritonitic adhesions about it. Males show ten per cent. more adhesions about the appendix than females. Besides, in males the appendix lies closer in contact with the psoas than it does in females. In females at least thirty-five per cent. of appendices hang in the pelvis, while in males at least twenty-five per cent. hang in the pelvis. Not only is the female pelvis wider in the small pelvis, but the relatively wider iliac fossa allows the appendix to glide to the left in the pelvis or to the right in the iliac fossa, in both cases allowing it to get farther from the psoas in the female than in the male. The conclusion arrived at from these investigations is that men do not have appendicitis so much more than women because Gerlach's valve is small, but men have appendicitis more than women because their appendix is far more frequently within the range of action of the psoas muscle, and an appendix filled with virulent pathogenic germs within range of an active muscle is liable to be so traumatized that the germs may be induced to pass through its walls. It will be granted, no doubt, that the digestive canal experiences periods when its vegetable germs are in a high state of virulence, and it is at such times that the bowel over

* I use the word parasplenitis in contradistinction to perisplenitis with its usual meaning. It seems to me that Rokitansky's description of perisplenitis refers chiefly to the fibrous capsule of the spleen.

the psoas muscle and the flexura coli suffer. Infants, so far as I have examined, do not have adhesions in the right iliac fossa, nor do youths, except very rarely. These appendicular-cæcal adhesions are products of adult life. Also it appears to me that they are gradually but irregularly formed and increased during all of adult life. I do not deny that there is a peculiar kind of angle or flexure at the cæcum which would aid, from abrasion of its mucosa by hard bodies, in allowing microbic invasion through the bowel wall. But seldom are adhesions found around the cæcum, the appendix, or the lower end of the ileum, unless they are in contact with the psoas muscle.

By a reference to Fig. 1, the oval dotted ring with No. 4 within it notes the chief field of adhesions around the appendix and cæcum. As the iliac muscle, No. 6, has a very limited range of action, the adhesions found around any organ lying on it will naturally be small.

In Fig. 2 adhesions may be around the cæcum, 24; around the appendix, 25, and around the ileum, 23. It happens that the three parts of the bowel lie on the psoas muscle, or rather within its range of action, in Fig. 2.

In my laparotomies I note frequently these adhesions in the right and left iliac fossæ.

Still another form of local peritonitis occurs at about the middle of the ascending colon, exactly where the ascending colon crosses the transverse portion of the duodenum. In the last one hundred cases there were peritoneal adhesions at this point in sixty-five per cent. of subjects. Haller's omentum frequently ends at the middle of the ascending colon, and it is generally involved in the adhesions. The ætiological factor is the action of the right psoas muscle and the right crus of the diaphragm, as is marked by the dotted oval line in Fig. 1, containing No. 3. The psoas is the chief agent. The muscles act on the gut when it contains pathogenic microbes, inducing them to migrate through the walls. It is these peritoneal adhesions at the point where the colon crosses the transverse portion of the duodenum which make a bend in the ascending colon at its middle, making its curve concave anteriorly.

There is a band of peritonæum passing from the junction of the upper third with the middle third of the ascending colon to the diaphragm, which I have designated ligamentum phrenico-colicum dextrum, which I think is derived from the lower pole of the right kidney during fœtal life. This band shows peritonitic adhesions in sixty-eight per cent. of subjects noted in the last one hundred cases. I think the ætiological factor is the trauma of the liver on this band from vigorous action of the diaphragm when the bowel contains pathogenic organisms. It is, hence, the trauma of the diaphragmatic muscle against a pathogenic bowel. The peritonitic adhesions on this phrenico-colic fold of peritonæum are very frequently dense and white.

The peritoneal adhesions in the lesser omental cavity are very numerous, and seldom does there occur an adult body without adhesions either in the right, left, or middle portion. The left end shares in its ætiological factors the same as the spleen, and hence will have about the same percentage of adhesions. The last one hundred cases gave eighty-five per cent. of subjects with peritoneal adhesions in the left end of the omentum. The chief adhesions of the left end of the lesser omental cavity consist of adhesive coalescence of the border of the blades, so that the left margin of the sac is much obliterated and made smaller. The adhesions consist of sacs, larger and smaller at the left, and white cicatricial bands stretched across in various directions. Closer observation would, no doubt, show just as high a percentage of peritoneal adhesions in the left lesser omental cavity (eighty-five per cent.) as it does in the spleen (ninety per cent.); the same factors which produce parasplenitis cause peritoneal adhesions in the left end of the lesser omental cavity, which showed seventy-one per cent. of peritoneal adhesions in the last one hundred subjects. I think there were more, but some cases were overlooked in recording. The adhesions in the right end consist chiefly of white, callous, dense, cicatricial connective tissue. Some broad bands exist occasionally. The ætiological factors producing the peritoneal adhesions in the right end of the lesser omentum are the same as those which cause adhesions in the gall-bladder region—viz., (*a*) the action of the right crus of the diaphragm on the bowels containing pathogenic germs; (*b*) the flexure of the duodenum and flexura coli hepatis; (*c*) the gall bladder; (*d*) possibly the crus of the diaphragm, acting on the peritoneal endothelium, abrades it, and cicatricial healing results.

The middle part of the lesser omental cavity is practically marked by the ligamentum gastro-pancreaticum, which is the sæptum bursæ omentalis. It marks the division between the two unequal sacs of the lesser omental cavity. Now, this middle portion of the lesser omental cavity lies directly over the left crus of the diaphragm and directly behind the stomach. In the last one hundred subjects there were forty-nine per cent. showing adhesions in the middle portion of the lesser omental cavity.

The peritoneal adhesions are due to the action of the left crus of the diaphragm on the stomach walls when the stomach contained pathogenic germs, or possibly on the endothelium, abrading it and allowing cicatricial healing. This percentage (forty-seven per cent.) is not high enough, as not every subject was definitely recorded, and those not recorded were considered to show no adhesions.

Fig. 2 is a sketch to illustrate the local peritonitis around the cæco-appendicular apparatus; 23 points to the ileum, with its adjacent adhesions; 24 to the cæcum, with its adhesions; and 25, to the appendix, with its adhesions—all over the right psoas and iliac muscles; 33 points to the left face of the meso sigmoid, with its manifest adhesions adjacent to the left psoas muscle. This sketch is taken from a subject at the autopsy.

The sigmoid region in a hundred and fifty adult subjects showed a hundred and twenty-three with peritoneal adhesions around the sigmoid flexure, or eighty-two per cent. This is a high percentage of local peritonitis, but I insist that the observations were made with care. Infants, of which I have examined some twenty, showed no adhesions in the meso-sigmoid, and all subjects seen under twenty years had no local peritonitis in the meso-sigmoid.

The adhesions occur in two localities in the meso-sigmoid: (*a*) On the left face, to which this eighty-two per cent.

refers. The adhesion exists between the left face of the meso-sigmoid and the psoas muscle. So far as I am able to observe, these adhesions are associated with the psoas and iliac muscles. I have examined them with great care, not only in these one hundred and fifty recorded cases, but in some hundred bodies which I dissected but preserved no records of. I look on these adhesions on the left face of the meso-sigmoid as the result of the action of the psoas and iliac muscles on the sigmoid at the times when the bowel contained virulent pathogenic microbes. The action of the muscles simply favored their passage from the mucosa to the peritonæum, aided frequently, no doubt, by by abrasions of the mucosa by sharp, rough fæces as they passed onward. It might be maintained that there must be a wound of the mucosa of the sigmoid for germs to migrate; but even if that were so the number of times which this mucosa must necessarily be abraded by dry, hard fæces would be sufficient to explain the matter, and a wounded mucosa under vigorous muscular action and continued abrasion by hard fæces would allow the wounds of the mucosa to remain long unhealed, allowing still further chances to infect. These adhesions on the left face of the meso-sigmoid vary in amount from the size of a half pea up to over a square foot. The meso-sigmoid is often firmly bound down to the psoas and iliac muscles, but wherever observed it will nearly always be noted that the chief and vast majority of adhesive, local peritonitis of the sigmoid is directly associated with the region of action of the psoas muscle and also with its longest range of action.

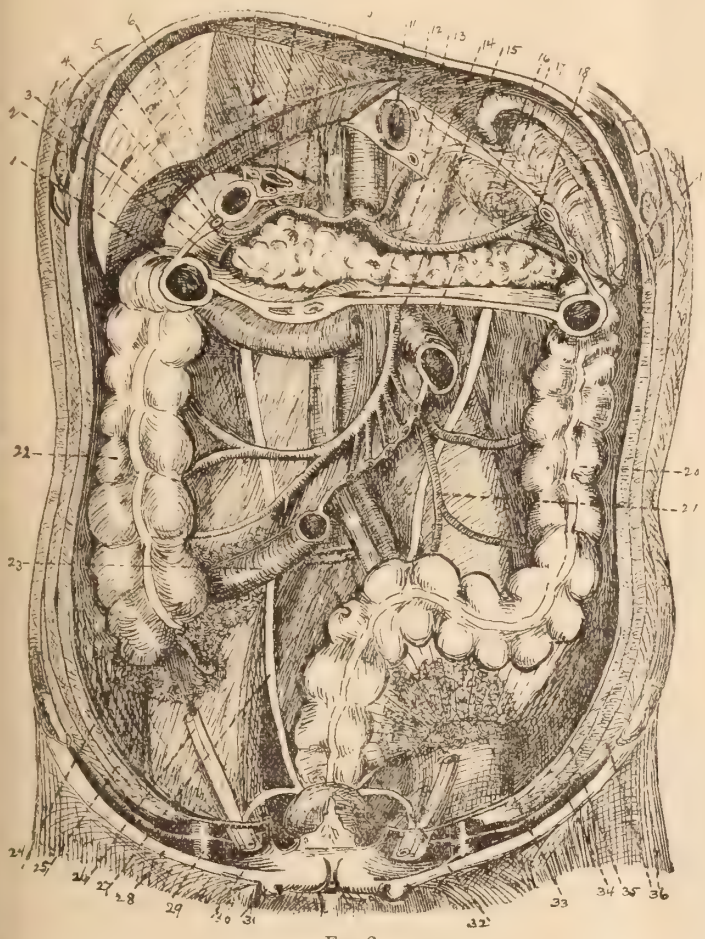


FIG. 2.

The effect of these adhesions on the sigmoid is to dislocate it—*i. e.*, to keep it permanently out of its normal position. They compromise the lumen of the sigmoid and hamper its peristalsis. The adhesions constrict it at one point and project its mucosa into the bowel lumen, thus making it a target for hard fæces to wound still further, allowing the old disease to continually exacerbate. Periodic infectious invasion from mucosa to serosa is its mode of progress. The peritonitis is an evolutionary and hence progressive disease. I wonder if a dislocated sigmoid from adhesions and compromising lumen and peristalsis does not cause pain, and from reflex disturbance result in indigestion, malnutrition, and anæmia, and the final unbalance of neurosis. It is astonishing to observe the amount of adhesions and broad bands which are found in this region. Many times the bands act and appear like the surrounding normal peritonæum. Do not the many focuses of new tissue formations build nests for malignant growths in the sigmoid? The adhesions are slowly formed during adult life. A curious feature is that the intersigmoid fossa, discovered first by Hensing, 1844, and opening on the left face of the meso-sigmoid, is attacked, perhaps, with local peritonitis the most frequently of any part of the meso-sigmoid except that lying directly over the psoas. The explanation of this, no doubt, is that the mouth of the intersigmoid fossa opens near the internal border of the psoas muscle, and hence is subject to very wide range of action and friction of the muscles. The scars around this fossa are dense and thick, showing a radiating appearance. Their thickness and elevation above the peritoneal surface show their characteristic condition of contraction which so frequently distorts the mouth of the fossa and often closes it entirely or partially. The adhesions on the left side of the sigmoid are the ones which chiefly distort, constrict, dislocate, and hamper peristalsis of the S romanum.

(*b*) On the right face of the right side of the meso-sigmoid there begins a fold of peritonæum which reaches from the middle of the meso-sigmoid to the junction of the lower and middle thirds of the mesentery. It may be imperceptible, especially if not put on the stretch, or it may be a fold of two inches' breadth. This fold is known as the ligamentum mesenterico-meso-colicum. But I shall call it Gruber's fold, as Gruber, the celebrated Russian anatomist, was the first to describe it, so far as I am aware. In Gruber's fold may often be found pale, white stellate-shaped or radiating scars which have contracted considerably, as is shown by their elevated surface and the distortion of the adjacent peritoneal surface. The scar may be linear, with irregular branches passing from it. It may be noticed that I have taken as the first two chief points of local peritonitis the portions of bowel within range of action of the two psoæ (and iliac) muscles. It is not because they are symmetrical as to the body, but because pathological facts

are in favor of muscular action as being the ætiological factor producing the adhesions at times when the gut lumen possesses virulent microbes, the location of the adhesions being constantly in close connection with the muscles. There being no adhesions in infants favors the views, as the psoæ of infants have not acted to any great extent, though they drink Chicago milk with all its germs. I have not found them in children. Again, if the cæcum and appendix do not lie in contact with the psoas, adhesions are not liable to arise unless it be a non-descended cæcum, which was, no doubt, the result of intra-uterine peritonitis. Also, if any portion of gut other than the cæcum and appendix lie in contact with the active range of the psoas, it is liable to have adhesions around it. It seems to me also to explain attacks of appendicitis from trauma of the psoas activity while the appendix contains virulent germs. Besides, the greater number of appendices in contact with the psoas in males explains their greater frequency of appendicular attacks. Again, the demonstration of seventy-two per cent. of peritoneal adhesions around the cæco appendicular apparatus will instruct surgeons that adhesions do not justify an operation, and that large numbers of appendicitis patients recover with no operation. The reason there are more adhesions on the left psoas (eighty-two per cent.) is because the gut is more continually in contact with the bowel, and it can not escape the action of the muscle, while on the right psoas, the cæcum and appendix frequently may be found entirely out of range of the psoas muscle.

In discussing this subject of local peritonitis Dr. Le Count suggested that the muscle action might traumatically abrade the endothelium from the peritoneal surface and the resulting healing be cicatricial. With this idea in view, local peritonitis would be a slow, progressive, evolutionary process. But this idea does not explain the freedom of infants and adolescents from the local peritonitis, which is a generally observed matter. I would ask why, if all bowel segments are out of range of psoas action, we scarcely ever find a single peritoneal adhesion in the peritonæum covering the muscle. For local peritoneal adhesions on the muscles, it appears to me, bowel segments are the chief essential in contact with the muscle.

Another major region of local peritonitis is the gall-bladder region. In one hundred and fifty subjects there were one hundred and two with peritoneal adhesions about the gall bladder, or sixty-eight per cent. To show how these observations agree, I took fifty subjects at a time, entirely independent of each other. The first fifty resulted in sixty-six per cent., the second fifty in sixty-six per cent., and the third fifty in seventy-two per cent. of adhesions, which equals sixty-eight per cent. as an average. In dealing with adhesions we are dealing with a composite region of infections. The three sources of infection in the gall-bladder region are:

(*a*) At the hepatic flexure of the colon.

(*b*) At the gall bladder.

(*c*) At the duodenum (including the pylorus).

I am convinced by my labor so far that the chief infectious source is the hepatic flexure of the colon and the spirally curved duodenum. The gall bladder is only an occasional intruder. The reasons for local peritonitis in the gall-bladder region are:

(*a*) The flexures of the colon and duodenum.

(*b*) The activity of the right crus of the diaphragm on the flexures of the bowels at times when pathogenic germs exist in them.

By reference to Fig. 1 it will be observed that the right crus of the diaphragm (No. 2) is a large muscle, and that it reaches down to the third lumbar vertebra. It is easy to observe also that the muscle is in quite constant activity. The duodenum crosses the right crus of the diaphragm quite high up, where the muscle has a long range of action. Besides, the hepatic flexure of the colon rests on the duodenum in such a manner that any essential movement of the duodenum (as it lies at No. 2) is accompanied by movement of the colon. If the muscular action is vigorous on the gut, especially at times when the pathogenic germs are virulent and some abrasions of one or the other mucosa exist, microbic invasion is liable to occur. Sixty-eight per cent. of local peritonitis around the gall bladder in one hundred and fifty adult cases is sufficient to indicate quite a constant cause. This local peritonitis increases with age. Close examination discloses that the adhesions are more frequently connected with the gut than the gall bladder, as they may be traced along the crus of the diaphragm, and some four times in one hundred subjects the adhesions entirely closed Winslow's foramen and passed well up to the under surface of the liver. However, the antrum bursæ omentalis, or bursa omentalis minoris, containing Spiegel's lobe, is scarcely ever afflicted with adhesions. It is out of range of any bowel. Yet the sæptum bursæ omentalis minoris, forming what I have christened Huschke's foramen, has perhaps ten per cent. of adhesions, because it is so behind the stomach, which rests on the left crus of the diaphragm. Many times the gall bladder itself is free from adhesions while they lie thickly clustered around the duodenal curve and the hepatic flexure of the colon. But occasionally much less frequently one can trace the adhesions almost directly to the gall bladder. Dr. Lucy Waite and I observed one subject where there was an open fistula between the gall bladder and the duodenum. A stone had passed from the gall bladder to the duodenal lumen by ulcerating its way through both walls. Adhesions held this fistula bimucosa safely together and the woman died of some other disease. In this series of one hundred and fifty autopsies there were some thirty-five females, which number is too small to enable me to state whether females have more local peritonitis about the gall bladder than males. I have seen the curved duodenum fastened to the lower surface of the liver, but no doubt the friction or trauma from liver movements induced the infective invasion. Again, it seems, so far as I can observe, that the adhesions fixing portions of omentum in the gall-bladder region are chiefly due to infectious invasion from the bowel.

So far as local peritonitis occurring at the hernial orifices is concerned, I have not kept an exact record, but in a considerable number of bodies one can find white, callous cicatricial tissue at one or both of the internal inguinal

orifices. One finds three or four subjects in a hundred with the omentum or bowel passed out of some hernial orifice and, of course, accompanied by some distinct local peritonitis. The hernial sac is frequently thickened by chronic peritonitis, while the visceral peritonitis will generally show much less pathology. No doubt the peritoneal scar at the hernial orifices in some subjects represents an engaged and reduced hernia. The visceral peritonitic scar having been not very severe, has long since passed away or become invisible, while the more severe peritoneal cicatrix at the hernial orifice alone remains to tell the tale of trauma and peritonitis.

So far as accidental local peritonitis is concerned, it is difficult to separate it from perforation and trauma in its ordinary sense, all of which I do not wish to include. I mean by accidental local peritonitis a local peritoneal inflammation which occurs fairly constant, having appreciable causes. The most typical accidental local peritonitis occurred in one subject in which sixteen inches of sigmoid was in an inguinal hernia and also there were distributed along some fifteen feet of small bowel; each of these bowel packets was bound into a mass by peritoneal adhesions. There is no doubt that each of these intestinal balls represent the result of an engaged and reduced hernia. In persons who have large hernial rings, peritoneal adhesions will be found fairly constant in the viscera accidentally engaged in the hernial rings for a longer or a shorter time. It may be well to add that the kind of local peritonitis presented in this paper is almost never fatal. Some of its adhesions may produce disturbances in life—pain, indigestion, malnutrition, anæmia, and finally necrosis, but generally no grave symptoms arise.

As one glance over the table of local peritonitis would give the impression that few adults possessed a normal peritonæum—*i. e.*, free from inflammation—it is a fact that scarcely ever an adult can be found without peritoneal inflammations. This is not strange to any one who will study the structure of the peritonæum by the aid of the microscope and penciled, silvered preparations. He will soon be convinced that the peritonæum is an immense lymph sac. Wide and numerous lymphatic channels course in every direction immediately under its transparent endothelial layer. Lymphatic tissue takes on inflammation slowly unless it be overwhelming. Inflammation arising by microbes passing through the duct wall is, no doubt, slow, limited, and periodical. But a slight amount perhaps passes out at any one time, so that the lymphatics are capable of resisting and circumscribing the infectious invasion. (As pelvic peritonitis arises from a unique union of mucosa and serosa in females only, I will not discuss it in this article on adult local peritonitis.)

The following list shows the percentage of various points of local peritonitis: In a hundred and fifty cases, perisplenitis in ninety per cent.; in a hundred subjects in left end of lesser omental cavity, eighty-five per cent.; in a hundred and fifty subjects, meso-sigmoiditis (left psoas), eighty-two per cent.; in a hundred and fifty subjects in cæco appendicular apparatus, seventy-two per cent.; in a hundred subjects in the right end of the lesser omentum (right psoas), seventy-one per cent.; in a hundred and fifty subjects in gall-bladder region, sixty-eight per cent.; in a hundred subjects in the ligamentum phrenico-colicum dextrum, sixty-eight per cent.; in a hundred and fifty subjects where the colon crosses the transverse duodenum, sixty-five per cent.; in a hundred and ten male subjects in the semen sacs, seventeen per cent.; in forty females in the pelvis, eighty per cent.

Conclusions.—1. The local peritonitis of adults is hardly ever directly fatal, but may produce a train of symptoms, such as indigestion, malnutrition, anæmia, and neurosis.

2. The peritoneal adhesions which demand operation belong almost exclusively to those involving the organs of high mobility and peristalsis, such as the small intestines, the sigmoid, the bladder, and the Falloppian tubes (especially amputated ones).

3. Local peritonitis occurs at fixed bowel flexures and at the longest range of muscular action associated with the peritonæum.

4. The ætiology of the adult local peritonitis is infectious invasion through the gut wall.

5. The methods of transmission of infection are through abrasion of the mucosa aided by the trauma of muscular action on a bowel containing pathogenic microbes.

6. Local peritonitis does not occur in infants at bowel flexures, or especially over the long range of muscular action.

7. It is extremely rare to see an adult with a normal peritonæum—*i. e.*, free from peritonitis.

8. The constant adhesions found around the gall bladder and cæco-appendicular apparatus teach us that operations in these regions can not be justified merely on account of the adhesions.

9. Adult local peritonitis seems to increase with age.

10. Peritonitic adhesions seem to be able to organize and appear and act like normal peritonæum.

11. Peritonitis is Nature's method of repair and prophylaxis. Peritonitis saves life, while infection kills.

12. Local peritonitis occurs chiefly on the dorsal region, at the points where the mesenteries fix the digestive tract and close to the highest range of muscular action. Muscular trauma, abraded epithelia, and infection tell the tale.

13. The track of the infection from mucosa to serosa can not always be traced. A healthy mucosa (and even muscularis) may underlie many peritoneal adhesions, or a healthy serosa may be adjacent to diseased mucosa.

14. The dense adhesions of local peritonitis may result in strictures, malignancy, dislocated viscera, pain, restriction of peristalsis, and immobility of organs—disease.

15. The peritonæum may have its endothelium abraded traumatically by muscular action, and the resulting healing be cicatricial; the matter of local peritonitis being a slow, gradual, evolutionary process of adult life.

The Section in Genito-urinary Surgery of the New York Academy of Medicine.—At the meeting held on Tuesday evening, the 14th inst., Dr. William K. Otis was elected chairman for the ensuing year.

VENOUS PHENOMENA.

By ALOYSIUS O. J. KELLY, A. M., M. D.,

PATHOLOGIST TO ST. AGNES HOSPITAL;
PATHOLOGIST AND CLINICAL ASSISTANT TO THE NEUROLOGICAL DEPARTMENT, PHILADELPHIA POLYCLINIC;
ASSISTANT TO THE MEDICAL DISPENSARY
AT THE HOSPITAL OF THE UNIVERSITY OF PENNSYLVANIA.

(*Concluded from page 77.*)

In the preceding remarks attention has been particularly directed to the occurrence of pulsation in the jugular veins. While not always limited to these veins, the pulsations are usually here more marked, but have very frequently been observed elsewhere. Galen noted pulsation of the temporal and jugular veins (Beyer). Walshe (19) records having seen pulsation of the right mammary veins, and notes observations of Dr. Jenner, in which there occurred respiratory and cardiac pulsations of the veins of the dorsa of the hands and feet. Osler (20) and Vierordt (21) have also noted pulsations of the superficial mammary veins. Benson (22), Graves (23), Davis (24), Seidel (25), Friedreich, and Marsh (26) record observations of pulsations of the cutaneous veins of the upper extremity, forearm, and hand. Davis and Marey (27) saw pulsations in the veins of the lower extremity; Ward (28), a case in which the pulsations extended throughout the cutaneous veins of the forearm, hands, and even fingers; and Beyer, pulsation of all the visible veins of the body. Benson, Gendrin (29), and Friedreich noticed pulsation of the thyreoid veins, and Gendrin pulsation of the veins of the scalp. Friedreich twice saw pulsations in the temporal and frontal veins. Elliston (30) observed four cases of "universal pulsation of the veins synchronous with that of the arteries." Brunton (31) describes unilateral pulsation in the left jugular, and suggests that it is due to compression of the left innominate by the aorta. Leyden has observed a double positive presystolic-systolic venous pulse with hemi-systole. Personally I can recall a case of well-marked pulsation of the veins of the upper extremity, especially of the hand, and another case in which the positive jugular pulse extended to the facial veins. The occurrence of pulsation in the retinal veins is a well-known fact, Lang (32) and Barrett having found it positively present in 73·8 per cent. of all cases examined, it being doubtfully present in 14·8 per cent. of the cases. Attempts have been made to explain this on the supposition of intra-ocular tension; proximity of the retinal artery and vein (Gowers (33)); extension of pulse from the cerebral sinuses (Mosso, Helfreich (34)). Putnam and Wadsworth (35) have recorded a curious observation, not yet confirmed, in which they noticed, synchronous with the action of the heart, independent of the ordinary pulsation, and occurring at intervals corresponding to about five respirations, an intermitting variation in the size of the retinal veins.

The positive venous pulse, which, as we have seen, we usually study on the jugular veins, it being exceptionally demonstrable on the superficial veins of the trunk and extremities, must be conceded to be present in those internal veins of the trunk in intimate connection with the heart, as the inferior vena cava (Senac, Seidel, Geigel) and its branches, all of which, excepting the hepatic vein, are ordinarily beyond our fields of study. A cardiac systolic pulsation of the hepatic vein is usually present in cases of tricuspid insufficiency, and is pathognomonic of that affection. This pulsation, first described by Allan Burns (36), may be studied by means of Mackenzie's polygraph. Clinically it can be well recognized by placing one hand over the lower edge of the liver in the mammary line and the other posteriorly at about the level of the eleventh or twelfth rib. In case the pulse is present, one appreciates a rhythmic expansile systolic increase and diastolic decrease in the size of the liver. A certain amount of experience and a degree of acuity of perception are requisite for the proper appreciation of this as of all venous phenomena, but none of them are beyond the limits of ordinary intelligence. Attention to the expansile character of this pulsation, the rhythmic increase and decrease in size of the liver in all directions, will exclude confusion with a systolic impulse transmitted to the liver by a hypertrophied right, occasionally left, ventricle, or an impulse transmitted from the aorta or a large intra-thoracic or intra-abdominal aneurysm, all of which pulsations are limited to the left lobe of the liver; exceptionally, in case of a very marked transmitted impulse, the impulse may be perceptible even in the right lobe, but is always so much fainter than in the left, and is never expansile, that with care in the examination confusion is not possible. Occasionally to the liver pulse there may be added—particularly perceptible in the left lobe of the liver—a marked impulse from a hypertrophied heart. This systolic venous liver pulse is (almost) identical in time with, though somewhat different in character from, the arterial liver pulse which one occasionally, but very exceptionally, meets with as a consequence of the *pulsus celer* of aortic insufficiency. But attention to the signs and symptoms characteristic of each condition removes the liability of mistaking one for the other. In this connection Allan Burns mentions that an epigastric pulsation may be produced by an impulse transmitted through a solidified lung, and cites another case from Senac in which the epigastric pulsation was due to an inferior vena cava as large as a man's arm.

The pulsatory phenomena attending incompetency of the tricuspid valves have been sufficiently described. What venous indications of stenosis of the right auriculo-ventricular aperture may we expect? The mechanism whereby are produced both the physiological and the pathological venous pulse have been sufficiently dwelt upon to make it evident that, excepting the two rare combinations of morbid conditions cited simply as curiosities, no systolic venous pulse can occur independently of an incompetency of the tricuspid valves. The impediment offered to the onward flow of the venous blood by a stenosis of the right auriculo-ventricular opening produces of necessity a venous congestion of degree dependent upon the extent of the stenosis—resistance, and the power to overcome it—hypertrophy. Venous congestion and dilatation are thus the first and most evident venous signs of stenosis of the right auriculo-ventricular opening. These are usually very intense though minor grades are sufficiently often observed; and the venous pulse, if present—it may be absent if the venous congestion is very great or the right heart is weakened—can not be other than diastolic-presystolic (the negative

pulse). In cases in which there is a stenosis with incompetency of the tricuspid valves the nature of the venous pulse will depend upon the degree of the latter morbid condition. Be it slight, the venous pulse, if present, is diastolic-presystolic; but if somewhat marked, or very marked, no matter what the degree of stenosis, the pulse is presystolic-systolic.

While in some details there have been differences in the results obtained by various investigators regarding the venous pulse, they agree in essentials. On superficial observation the tracings of Riegel and Gottwald appear to differ, but closer examination reveals marked similarity. While François Frank (37) differs with the two observers mentioned in making the down stroke tricrotic, and Mackenzie asserts the up stroke to be tricrotic, they all agree in maintaining that the rise of the normal phlebogram culminates in the presystole—the collapse of the vein being cardiac systolic. Mackenzie, asserting the pulse to be tricrotic, maintains that the primary wave, which he calls the ventricular wave, is due to the still contracting ventricle forcing blood into the now filled auricle; the secondary or auricular wave is due to the auricular systole causing a backward flow of the blood into the veins; the tertiary wave is due to the shock of the neighboring artery. This is noted also by Gerhardt (38). This tertiary wave may vary much in position; it may be at the summit, or on either the ascending or descending limb of the phlebogram near the summit. The collapse of the vein which he designates the auricular depression is due to the auricular diastole. When, however, he remarks that "pulsation of the veins arises where from any cause dilatation of the right heart and great veins, with incompetence of the tricuspid and venous valves, take place," he is certainly in great error if, as is inferred, he means that venous pulsations are produced only under such circumstances, for he evidently either ignores entirely, or at least overlooks, the occurrence of a venous pulse under normal circumstances. And while the upward stroke is in truth frequently tricrotic, the down stroke of the venous tracing in cases of tricuspid insufficiency is certainly not due to the auricular diastole alone, as he suggests. His designations of auricular and ventricular pulse may be awarded a certain commendation, but, differing as he does with all other observers, one can not agree with him when, denying the existence of a venous pulse under normal circumstances, he asserts the presence of such a pulse to be always indicative of dilatation of the right side of the heart; the ventricular pulse, corresponding to our positive pulse, being but a more marked auricular pulse, both being due to different degrees of the same morbid condition. Gerhardt suggests that the wave often noted, occurring at the beginning of the cardiac diastole, is due to a diastolic ascent of the atrio-ventricular plane.

From the foregoing remarks we see that the blood which leaves the heart intermittently, becomes remittent in its flow as it again approaches the heart, under normal circumstances flowing through the veins in an even stream. To this statement, however, there is said to be an exception in the case of the intracranial sinuses, in which, owing to the rigidity of the bony vault, the intermittent arterial inflow necessitates an intermittent venous outflow (Fredericq (39), Ringer and Sainsbury [40]). As we have remarked before, it has been attempted to hold this pulsation in the cerebral sinuses answerable for the pulsation in the retinal veins (Helfreich).

In studying venous phenomena it is essential to bear in mind a factor of considerable influence, to which reference has not yet been made. I allude to the influence of posture on the venous pulse. There are operating within the venous system two forces—the *vis a tergo*, urging on the blood from the periphery, and the *vis a fronte*, at the heart. The former is more active in health, the latter in disease. The intensity of the venous pulse depends upon the activity of these forces and the relation they bear to each other. In the erect posture, to the *vis a tergo* is joined the force of gravity; the *vis a fronte* remains the same in both postures, and thus, compared to the total force moving onward the blood, is much less in the erect posture than in the supine. The assumption, then, of the supine posture is more favorable to the production of a venous pulse, and often serves to bring into evidence a pulsation which in the erect posture apparently does not exist. And this influence is more manifest in health than in disease, in physiological than in pathological states. These forces are also more evident in the jugular vein of the right side than in that of the left, as the left jugular vein joins the innominate at a considerable angle, while the right jugular is continued into the right innominate and superior vena cava in an almost straight line.

For reasons corresponding to those producing pulsations in the systemic veins, especially in the jugular veins, in cases of tricuspid insufficiency, there must occur in cases of mitral insufficiency similar pulsations in the pulmonary arteries and their branches. These are but rarely positively demonstrable, while seldom visible, though they have been observed and appreciated by palpation through the thoracic wall by Sahli (41), but are possibly more capable of demonstration by attention to the cardio-pneumatic movements and curves (Landois (42)).

To variations in the intrapericardial, negative pressure has been ascribed some rôle in the production of the phlebogram. It is interesting to note the effect produced on the venous system by changing this negative pressure to a positive one, and causing it to become quite marked. To François Frank are we indebted for the first experimental investigations in this respect, and to Riegel for later developments. The first effect of an increasing positive intrapericardial pressure is an increase of the venous pressure—a venous congestion, whereby ensues with greater facility than under normal conditions a marked pulse in the jugular veins, which, however, can not be other than diastolic-presystolic, never systolic. The increasing intrapericardial pressure, however, continuously renders more difficult the entrance of blood into the auricle, necessitating that the venous pulse become smaller and smaller, less evident, until finally, despite excessive venous congestion, it may cease entirely.

Another though rare venous phenomenon is the so-

called diastolic venous collapse of Friedreich. The collapse of the vein occurring at the time of the cardiac diastole, the phenomenon in this respect resembles the true venous pulse. The distinction between the two is, however, readily made by compressing the jugular vein in its middle. The conditions which follow this compression, if the phenomenon be the Friedreich's diastolic venous collapse, are not the same as those which follow compression of a vein the seat of a true venous pulsation, but resemble more those which follow compression of a vein in which there is a negative, a diastolic-presystolic pulse; that is, the pulsation, both peripherally and centrally, to the point of compression ceases or diminishes very much in intensity. Of itself this phenomenon is of little particular importance, but when observed in conjunction with a systolic retraction of the præcordium—not the region immediately surrounding the apex beat, but more or less the entire præcordium—and the systolic retraction of the back, in the region of the eleventh and twelfth ribs, lately described by Broadbent (43), it is quite diagnostic of adhesive pericarditis or indurative mediastino-pericarditis. Its production is explained upon the assumption of the fact that the adhesions which bind the heart to the anterior thoracic wall sensibly interfere with the cardiac movements. The resilient chest wall during the ventricular systole suffering retraction, the occurrence of diastole permits of a sudden rebound and some depression of the diaphragm, a sudden increase in the size of the intrathoracic cavity, an increase of the intrathoracic negative pressure which is causative of an aspiratory action operative within the veins, and a consequent sudden diastolic venous collapse.

There is still another form of venous pulsation to mention: the positive centripetal or so-called penetrating venous pulse to which Quincke (44) in particular has drawn attention. The pulse ensues when the arterial pulse wave, not becoming abolished in the capillaries, still possesses sufficient force to cause pulsation in the peripheral veins. As such it is dependent upon conditions similar to those productive of the capillary pulse, and like it, too, have been observed chiefly in cases of aortic insufficiency. These two pulses are, however, not always observed conjointly; rather may we find the venous pulse present, the capillary pulse wanting, this being due to the fact that the blood in the capillaries being distributed over such a wide area, there is present not sufficient power to cause the production of a demonstrable pulse in them, while there is sufficient power to produce, under favorable circumstances, a pulse in the smaller veins where the blood is again more concentrated; or there may occasionally be a direct communication between a small artery and vein. Further characteristics of this pulse are, that it is observable not in the jugular veins, but in the smaller veins of the extremities; that it is usually an accompaniment of the arterial *pulsus celer;* and that following compression, the pulsation ceases in the central but not in the peripheral part of the vein. Associated with the arterial *pulsus celer* it is usually found in cases of aortic insufficiency, but likewise in cases in which the vessels are of diminished tension, rather full, and the heart active. It has been observed in chlorosis (Osler) and other anæmias, arterio-sclerosis, fever conditions, cerebral and spinal disease, neurasthenia (Osler), and in healthy individuals (Hippesley (45), Quincke). Diagnostic and prognostic value it has little.

Sufficing now with those movements of the veins due to the action of the heart, we have to revert to those other venous movements, before alluded to—those which owe their production to the phases of respiration. Inspiration is usually said to be causative of a decrease, expiration of an increase, in the intensity of the venous pulsations. But such a simple statement of facts is manifestly incomplete. Not only do the respiratory movements influence the venous pulsations as a series, but they likewise affect the individual pulsations, and are not devoid of a bearing on the celerity and frequency of the pulse. The changes to which the venous pulse is subjected by the movements of respiration are demonstrable by inspection, palpation, and sphygmographic tracing, and are particularly observable on the jugular veins; to a less marked degree on the axillary and crural veins. Exceptionally one may demonstrate respiratory changes in the liver pulse. By ordinary quiet respiration, the effects of respiratory influence on the visible veins is not very evident, and only becomes so on forced inspiration and expiration, being especially marked when the veins are the seat of overdistention.

Fig. 3 represents a sphygmographic tracing of a positive (presystolic-systolic) venous pulse of the jugular vein, illustrating the effects of respiration. The lettering indicates the beginning of inspiration and expiration.

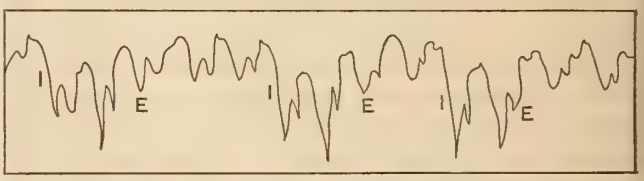


Fig. 3.—Illustrating the influence of respiration on the positive (presystolic-systolic) venous pulse of the jugular vein. After Kovács.

The respiratory movements thus affect not only the pulsations as a series, but likewise the individual pulsations, inspiration causing a lowering of the height of the pulse curve, with an increase in the amplitude of the individual pulsations, while expiration is productive of an elevation of the curve and a decrease in the amplitude of the individual pulsations. Excepting the increase in the frequency of the pulse rate often noted during inspiration, and which is due to the increased cardiac contractions occurring during that period of the respiratory movements, the alterations produced in the veins by the phases of respiration are dependent upon respiratory changes in the intrathoracic pressure, and upon a direct respiratory influence exerted upon the retrograde blood wave. That a forced inspiration is productive of an aspiratory action operative within the veins, causing an acceleration of the rate of blood flow and a decrease in the fullness of the veins, with a consequent lowering of the height of the series of pulse tracings, requires no further explanation. The opposite condition of affairs ensues during expiration. The inspiratory

diminution in the fullness of the veins causes a lessening of the venous tension, permitting a greater excursion to the individual pulsations. This diminution in tension, however, upon very forced inspiration may progress so far as to cause a much less frequently observed inspiratory diminution in the amplitude of the individual pulses. The usually observed expiratory diminution in the excursion of the individual pulsations is dependent upon an expiratory fullness of the veins and an ensuing increase of tension. Supplementing these influences of respiratory variation in venous fullness and venous tension is the direct influence exerted on the retrograde blood flow by the phases of respiration. Inspiration operates adversely to any retrograde movement of the blood, thus aiding in lessening the intensity of any venous pulsation. To such an extent is this factor at times active, that a forced inspiration may, and frequently does, cause a marked diminution in the intensity of a presystolic-systolic venous pulse—one due to a tricuspid insufficiency. The fact that during inspiration the flow of the blood through the lungs is more favored than it is during expiration, is also partly accountable for the inspiratory diminution in the intensity of the venous pulse. The influence exerted by respiration on both the positive and negative venous pulses is similar, except in that, as the retrograde wave in the negative pulse is very slight, inspiratory diminution in the excursion of the individual pulses is more often observed in the latter than in the former.

The influence of posture—the action of gravity—is also to be considered. Depending upon the position of the body, inspiration or expiration is at times assisted, again impeded, in its action.

Inspiration, assisting as it does the flow of blood from the veins—in cases of positive venous pulse, when the venous collapse occurs synchronously with the carotid diastole—is productive of a quicker fall of the catacrotic limb of the phlebogram; hence the frequent inspiratory increase in the celerity of the pulse.

The influence of respiration on the venous pulse is rendered particularly evident by strained efforts, such as coughing, in which the sudden explosive expiration is productive of excessive distention of the veins of the neck, particularly of the bulb. Most intense are these respiratory changes in cases of emphysema, in which condition the veins are often permanently excessively distended, and manifest by quiet breathing marked variations, which exceptionally may extend to the veins of the face and the extremities.

A condition opposite to that usually observed—a condition of inspiratory increase, expiratory decrease of the venous pulsation, to which Kussmaul (46) has directed particular attention—is at times observed, and is an important sign of indurative mediastino-pericarditis. Like the *pulsus paradoxus*, it is produced by a pulling or tugging on the intrathoracic veins more often of the right side by bands of fibrous tissue, whereby the lumen of the vessel is decreased and the flow of the blood hindered. Very exceptionally this same pulse may be caused by other processes narrowing the upper thorax, as substernal or mediastinal tumors.

By the aid of auscultation we are enabled to detect in the veins both sounds and murmurs. To the occurrence of both frequent attention has been directed, among others, by Friedreich in particular. Normally the flow of blood through the veins occurs without sound or murmur, excepting those few instances of apparently healthy individuals in whom one can at times detect in the vessels of the neck the so-called venous hum, or *bruit de diable*. The occurrence of a pressure murmur caused by the stethoscope must in these cases be considered. The regurgitant blood wave of the positive venous pulse, in cases of tricuspid insufficiency, is capable of accomplishing with sufficient force a sudden increase in the tension of the venous valves as to cause a venous sound wherever these veins may be. This is most frequently heard over the jugular bulb, less frequently over the femoral vein at Poupart's ligament. The occurrence of the sounds usually presupposes competent valves, though the sound in the femoral vein has been heard in cases in which the valves were absent, under which circumstances its production has been explained upon the supposition of sudden expansion of the vessel. When the valves become incompetent the sound may be replaced by a short murmur; very rarely the sound and murmur may be heard in conjunction. The quite exceptional occurrence of a sound in the axillary vein has been described by Schreiber (47) and Kovács (48).

As on the intensity of the venous pulse curve, so also do the phases of respiration exert a considerable influence on the intensity of the venous sounds, in that inspiration produces an increase, expiration a decrease, in their intensity. The intensity or loudness of a vessel or valve sound, depending as it does upon the difference between the initial and end tension of the vessel wall or valve and the rapidity of this change, and as this difference is greater during inspiration, this inspiratory increase in the intensity of the venous sounds is quite readily understood. Supplementing this action are the greater inspiratory excursion and increased celerity of the venous pulse. The influence of respiration being more marked on venous pulsations than it is on arterial, so also is the inspiratory increase in the intensity of venous sounds more evident than that of arterial sounds.

In this connection, meriting short mention, are two rarer crural vessel phenomena: a double cardiac systolic regurgitation murmur in the vein (Friedreich), observed occasionally in cases of tricuspid insufficiency and due to insufficiency of the crural venous valves; and a crural triple sound or murmur (Friedreich, Kovács), due to the association of a double venous and single arterial tone, or a single venous and double arterial sound, observed occasionally in cases of aortic and tricuspid incompetency. Resembling the first of these mentioned, though it may be only single, and observed in healthy, especially thin people, produced by sudden pressure or coughing, and due to incompetency of the valves, one may hear a so-called expiratory crural venous valve sound or murmur (Friedreich).

But the most frequent and by far practically the most important phenomenon observed on auscultation of the veins is the so-called venous hum or murmur, or *bruit de*

diable, heard in the veins of the neck, very rarely in other veins. This is a continuous murmur, usually heard better on the right side, and is increased in intensity by pressure of the stethoscope; by the erect posture; by inspiration; by directing the head to the opposite side of the body, in consequence of tension of the cervical fascia and pressure of the omohyoid muscle. The pressure exerted on the jugular vein by this muscle during swallowing is said to be at times so great as to cause cessation of the murmur (Murray (49)). While occasionally present in seemingly healthy individuals, it is most frequently associated with anæmia, especially chlorosis, and is of some diagnostic importance. Explaining the production of this murmur, it has been the custom to speak of "eddies," "pressure streams," "external or internal friction," and the like, and most works on physical diagnosis that attempt at all to explain physical phenomena in medicine make use of such terms, asserting the blood passing from a smaller tube (the jugular) to a larger (the bulb) to be productive of eddies, which in turn cause the murmur. That eddies are produced is evident, but the assertion that they themselves give rise to the murmur rests more upon supposition than upon any experimental proof. Recent investigations by Geigel (50), whereby he endeavored to ascertain if eddies in fluids really produce murmurs, led to negative results; and he asserts, basing his assertion on the results of his experiments, that murmurs or sounds, whether intravenous, intra-arterial, or intracardiac, are due to lateral vibrations of the vessel walls or valves. And this is most probably the true explanation.

References.

1. Bamberger. *Lehrbuch der Krankheiten des Herzens*, S. 99, 1857.—Beobachtungen über den Venenpuls. *Würzburger med. Zeitsch.*, Bd. iv, S. 232, S. 248, 1863.—Beobachtungen über Doppelton und Doppelgeräusche in der Cruralarterie. *Deutsch. Arch. f. klin. Med.*, Bd. xxi, S. 440, 1878.

2. Friedreich. Ueber den Venenpuls. *Deutsch. Arch. f. klin. Med.*, Bd. i, S. 241, S. 291, 1865–'66.—*Krankheiten des Herzens*, II. Aufl., 1867.—Ueber Doppelton an der Cruralarterie, sowie über Tonbildung an den Cruralvenen. *Deutsch. Arch. f. klin. Med.*, Bd. xxi, S. 205, 1878.—Beiträge zur physikalischen Untersuchung der Blutgefässe. *Deutsch. Archiv f. klin. Med.*, Bd. xxix, S. 256, 1881.

3. Rosenstein. v. Ziemssen's *Handbuch der spec. Pathologie*, Bd. vi, 1876.

4. Eichhorst. *Lehrbuch der physikalischen Untersuchungsmethoden innerer Krankheiten*, 1881.

5. Mosso. *Die diagnostik des Pulses*, 1879.

6. Gottwald. Der normale Venenpuls. *Arch. f. d. gesammte Physiologie*, Bd. xxv, S. 1, 1881.

7. Geigel. Ueber den Venenpuls. *Würzburger med. Zeitsch.*, Bd. iv, S. 332, 1863.—Weitere Beobachtungen über Insufficienz der Tricuspidalis und Venenpuls. *Ibid.*, Bd. vi, S. 249, 1865.

8. Riegel. *Berliner klin. Wochenschrift*, 1881.—Ueber den normalen und pathologischen Venenpuls. *Deutsch. Arch. f. klin. Med.*, Bd. xxxi, S. 1, S. 470, 1882.—Ueber den normalen Venenpuls und über das Verhalten des Venensystems bei Pericardialergussen. *Deutsch. Arch. f. klin. Med.*, Bd. xxxi, S. 471, 1882.—Ueber die diagnostische Bedeutung des Venenpuls. *Sammlung klin. Vorträge*, No. 227 (innere Med., No. 78), 1883.—Ueber die Entstehungsbedingungen und die diagnostische Bedeutung des Friedreich'schen diastolischen Venencollaps. *Deutsch. Arch. f. klin. Med.*, Bd. xxxiv, S. 233, 1883–'84.

9. Guttman. *Lehrbuch der klinischen Untersuchungsmethoden*, S. 251, 1892.

10. Liebermeister. *Vorlesungen über specielle Pathologie und Therapie*, Bd. iv, 1891, S. 390.

11. Hodge. *Lancet*, Lond., 1830–'31, vol. ii, p. 409.

12. Beyer. Beobachtung einer Pulsation oberflächlich gelegener Venen. *Journal der pract. Heilkunde*, Suppl. Stk., S. 3, 1824.

13. Sansom. *Diseases of the Heart*, 1892.

14. Pramberger. Beitrag zur Beobachtung des normalen Venenpuls. *Wiener med. Wochenschrift*, Bd. xxxv, S. 353, S. 385, 1885.

15. Mackenzie. Pulsations in the Veins. *Jour. of Path. and Bacter.*, vol. i, 1893, p. 53.—Significance of Venous Pulse. *Edinburgh Med. Journal*, vol. xxxix, p. 1106, 1893–'94.—The Venous and Liver Pulses. *Jour. of Path. and Bacter.*, vol. ii, pp. 84, 273, 1894.

16. Ritter. De venarum pulsu ejusque causa valvula mitrali insufficiente cum foramine ovali aperto conjuncta. *Schriften der Universität zu Kiel*, Bd. iii, 1856.

17. Pepper and Griffith. Varicose Aneurysms of the Aorta and Superior Vena Cava. *Amer. Journal of the Med. Sciences*, vol. c, p. 329, 1890.

18. Bruce. Rupture of an Aortic Aneurysm into the Superior Vena Cava. *Edinburgh Med. Journal*, April, 1895.

19. Walshe. *Diseases of the Heart*, p. 117, 1862.

20. Osler. *Practice of Medicine*, p. 619, 1892.

21. Vierordt. *Diagnostik der inneren Krankheiten*, p. 227, 1894.

22. Benson. Case of Pulsation in Veins of Upper Extremity. *Dublin Journal of Medical Sciences*, vol. viii, p. 324, 1836.—On Visible Venous Pulsation. *Dublin Medical Press*, vol. xxxvii, p. 337, 1857.

23. Graves. *Dublin Medical Journal*, vol. vi, p. 54, 1834.

24. Davis. Case of Remarkable Pulsation in the Veins. *Dublin Hospital Reports*, vol. iv, p. 272, 1827.

25. Seidel. Zur Casuistik der Tricuspidal-Insufficienz. *Deutsche Klinik*, Nos. 1, 2, 4, 1863.—Pulsation der Vena Cava Inferior. *Deutsche Klinik*, No. 9, 1865.

26. Marsh. Case of Pulsating Veins. *Dublin Quar. Jour. of Med. Science*, vol. iii, p. 264, 1847.

27. Marey. *Physiologie médicale de la circulation du sang*, 1863. *La circulation du sang*, 1881.

28. Ward. *London Medical Gazette*, vol. x, p. 376, 1832.

29. Gendrin. *Maladies du Cœur*, p. 133, 1841–'42.

30. Elliston. *Human Physiology*, p. 191, 1835.

31. Brunton. On Pulsation in the Jugular and other Veins. *Med. Press and Circular*, vol. xxviii, p. 1, 1879.

32. Lang and Barrett. *Ophthalmic Hospital Reports*, vol. xii, p. 60.

33. Gowers. *Medical Ophthalmoscopy*, p. 20, 1890.

34. Helfreich. Zur Lehre vom Venenpuls der Retina und der intraocularen Circulation. *Arch. f. Ophthalmologie*, vol. xxviii, pt. iii, p. 1, 1882.

35. Putnam and Wadsworth. Intra-ocular Circulation. *Journal of Nervous and Mental Disease*, p. 690, 1878.

36. Allan Burns. *Observations on some of the most Important Diseases of the Heart*, p. 265, 1809.

37. François Frank. Du pouls veineux. *Comptes rendus de la Société de biologie*, Paris, pp. 47, 62, 111, 1882; *ibid.*, p. 603, 1889.

38. Gerhardt. Klinische Untersuchungen über Venenpul-

sationen. *Arch. f. exper. Path. und Pharmak.*, Bd. xxxiv, S. 402, 1894.

39. Fredericq. *Dictionnaire encyclopédique des sciences médicales*, t. ii, p. 654, 1886.

40. Ringer and Sainsbury. Pulsations and Murmurs in the Great Vessels of the Neck. *Lancet*, vol. ii, pp. 1212, 1268, 1891.

41. Sahli. *Lehrbuch der klinischen Untersuchungsmethoden*, S. 106, S. 249, 1894.

42. Landois. *Lehrbuch der Physiologie*, 8 Aufl., S. 111, S. 186, 1893.

43. Broadbent. An Unpublished Physical Sign. *Lancet*, p. 200, July 27, 1895.

44. Quincke. Beobachtung über Capillar und Venenpuls. *Berliner klin. Wochenschrift*, S. 357, 1868.

45. Hippesley. *Nature*, vol. xxxii, p. 389, 1885.

46. Kussmaul. Ueber schwielige Mediastino-Pericarditis. *Berliner klin. Wochenschrift*, S. 433, S. 445, S. 459, 1873.

47. Schreiber. Entstehung und Bedeutung der Doppelton im Peripheren Gefässsystem. *Deutsch. Arch. f. klin. Med.*, Bd. xxviii, p. 243, 1881.

48. Kovács. Zur Kenntniss der Venenphänomene bei Affectionen der Tricuspidalklappe. *Zeitschrift f. Heilkunde*, Sep. Abd.

49. Murray. Effects of Respiration and Deglutition on the Venous Hum. *Lancet*, vol. ii, p. 204, 1887.

50. Geigel. Die Entstehung der Geräusche in Herz und Gefässe. *Arch. f. path. Anatomie*, Bd. 140, S. 385, 1895.

Martin-Solon. Du pouls veineux observé aux veines dorsales des mains, pendant le cours de maladies aiguës. *Bull. de l'Académie royale de médecine*, Paris, t. x, p. 102, 1844–'45.

Potain. Des mouvements et des bruits qui se passent dans les veines jugulaires. *Bull. et mém. de la Soc. méd. d. hôp. de Paris*, 2s, iv, pp. 3, 27, 1868.—Rétrécissement et insuffisance de la valvule tricuspide. *L'Union médicale*, t. lii, p. 147, 1891.

Parrot. *Archives générales de médecine*, t. ix, p. 649, 1867.

Andry. *Lyon médical*, t. lxx, pp. 359, 391, 1892.

Immerman. *Deutsch. Arch. f. klin. Med.*, Bd. ii, S. 327, 1866–'67.

Schwalbe. *Deutsch. Arch. f. klin. Med.*, Bd. xliv, S. 553, Bd. xlv, S. 383, 1889.

Pribram. Beiträge zur Lehre von Cruraldoppelton. *Zeitschrift f. Heilkunde*, Bd. xi, S. 391, 1890.

Balfour. *Diseases of the Heart and Aorta*, pp. 8, 179, 1876.

Foxwell. *Heart and Lung Diseases*, p. 356, 1895.

King. An Essay on the Safety-valve Function in the Right Ventricle of the Human Heart. *Guy's Hosp. Reports*, vol. ii, p. 104, 1837.

Gibson. The Action of the Auricles in Health and Disease. *Edinburgh Med. Journal*, vol. xxviii, p. 118, 1883.

1934 Pine Street.

ON VOLUMETRIC TESTING FOR SUGAR.

By F. WALDO WHITNEY, M. D.

The urine not infrequently contains several representatives of the carbohydrate group, both in health and disease, as, for instance, we find lactose in the urine of nursing women; we also find in urine, apparently normal, small traces of dextro-glucose or dextrose, and larger amounts as the results of temporary conditions, perhaps physiological, as after eating large quantities of sugar or starchy foods, but more generally during the course of certain diseases, as in meningitis, liver diseases, cholera, during the access of fever, or as an effect of certain poisons, such as carbon dioxide, etc.; but its presence presents little interest to us unless it is persistent, in which case it becomes of grave importance, indicating a disturbance of the nutritive functions, so that glucose is not assimilated, or that the principal elements of the organism are transformed into glucose by pathological changes in the liver, or nervous system, or both.

The copper tests are seldom used for quantitative testing, the fermentation test being in general use as the most reliable; but this test is not very delicate, and, indeed, it does not show reaction at all if the sugar is less than 0·5 per cent.—about two grains and a half to the ounce of urine; and in its use many errors may be made, for the thorough conversion of the glucose into alcohol depends on many things besides the chemical change, such, for instance, as the yeast being perfect and free from sugar in its manufacture, the absence of other germs, the temperature, and the duration of fermentation. While the presence of certain elements may possibly prevent fermentation altogether, as well as the internal administration or external application of antiseptic drugs, such as mercuric salts, iodoform, quinine, salicylic acid, etc.; on the other hand, genuine diabetes mellitus is often preceded by precisely this one symptom for a time—viz., a small quantity of sugar in the urine. Therefore a quantitative test not subject to the sources of error that exist in the fermentation test, or requiring special apparatus—reliable, stable, and delicate—is much desired. It has been truthfully said that "a man with sugar in his urine is like a house that is undermined; he will surely fall, but no one can predict the precise time when the disaster will occur." The accurate study of the urine, therefore, has become one of the essential features of advanced clinical medicine. The physical characteristics of the urine are materially altered in typical diabetes mellitus. It is light in color, and of a greenish rather than yellowish tint, and transparent. The specific gravity is usually increased, ranging from 1·030 to 1·045 or higher. The reaction is acid, and remains so upon standing; and the quantity is usually increased in direct ratio to the quantity of sugar excreted, ranging from six to forty pints daily. The quantity of sugar varies from one to eight per cent., perhaps averaging from four to five per cent. in ordinary diabetes. When the presence of sugar is detected in the urine, it becomes of the greatest importance to determine the quantity in all cases, because such information furnishes exact knowledge of the grade and severity of the diseased condition upon which it depends; also the positive diagnosis. Noting the amount voided with comparative weekly tests shows the progress of the disease and the results of treatment.

The writer has been engaged in life-insurance work for fourteen years, and used Fehling's test as the most simple and reliable one when freshly prepared for qualitative testing. At the suggestion of Dr. Pavy, ammonia was added to the formula, which improved the end reaction for quantitative work, but it is equally unstable on account of the sodic tartrate. It has been recently proposed to alter Fehling's solution by substituting one hundred and seventy-five cubic centimetres of glucose for the

sodic tartrate and one hundred and thirty grammes of potassium hydroxide for the sodium-hydrate solution, but this renders the end reaction still more defective, for the cupric suboxide formed in the presence of potassium is more bulky than with sodium, and takes a longer time to settle, and it is therefore more difficult to determine the precise point of reduction. It also changes the ratio of reduction of cupric oxide and would indicate more sugar than is actually present. The ratio of reduction is one grain of sugar to 6·92 grains of cupric sulphate, while with the substitution of the potassium base it is one grain of sugar to 6 66 grains of cupric sulphate. This change, therefore, could not be made and the process retain any accuracy as a quantitative test according to its original ratio of reduction. The formula here given has been used by the writer for six years, although recently perfected by the mode of preparation of the salts, for both qualitative and quantitative testing in practical everyday work, with perfectly satisfactory results.

For practical testing *ten minims* of *urine only* are used, and with this amount the presence of albumin, urates, uric acid, creatin, creatinin, and other feebly reducing agents does not prevent the reduction of the reagent by glucose.

The formula of the standard solution (parts by weight) is:

	Grammes.
Ammonii sulphatis (C. P.)	1·2738
Cupri sulphatis (C. P.)	2·5587
Potassii hydroxid. (C. P.)	19·1620
Aquæ ammon. (sp. gr. 8·80)	312·2222
Glycerini (C. P.)	60.
Aquæ (dest.)	q. s.

One cubic centimetre of the reagent is the equivalent of—

	Grammes.
Cupro-diammonium sulphate ($N_2H_6Cu)SO_4$	0·03832
Cupric hydroxide, CuO,H_2O	0·41062
Grape sugar, anhydrous, $C_6H_{12}O_6$	0·00526

The sulphates of ammonium and copper are chemically combined as a double salt. It is best prepared for this reagent by adding chemically pure ammonium hydrate to a solution of cupric sulphate; a bluish precipitate falls, which redissolves in excess of the alkali, to form a deep-blue solution. Strong alcohol floated on the surface of the solution separates long right rhombic prisms, which are very soluble in water; this solution constitutes aqua sapphirina (Witthaus). The crystals should be dried on bibulous paper *in vacuo* and used immediately, for if they are exposed to the air they part with their ammonia and are converted into a mixture of basic sulphates. In Fehling's, Pavy's, and Purdy's solutions the solution of cupric sulphate is added to the solution of caustic potash, which forms cupric hydroxide. If added to the ammonia, it throws down the cupric hydroxide unless added to excess, yielding a deep purplish-blue solution that will only keep a longer or shorter period, according to the purity of the chemicals used and care employed. A permanent reagent can only be prepared by chemical combination of these salts before adding to the caustic potash solution.

The official potassium hydroxide contains (other than the fifteen to twenty-eight per cent. of water) from five to ten per cent. of impurities—viz., oxide of iron, chloride, sulphate, and carbonate of potassium, silica, lime, and alumina—and should be purified by the alcohol process. Digest the caustic potash in alcohol, which only takes up the alkaline hydrate; decant the solution from the precipitate, evaporate to dryness, and fuse the dry mass obtained.

Prepare the reagent with the chemicals as described, and add sufficient distilled water, so that 3·696 cubic centimetres (one drachm) are decolorized by 0·00526 gramme (one thirtieth of a grain) of anhydrous grape sugar.*

The following tables will give the amounts of sugar in analytical testing:

If reduced by	It contains to the ounce,	Percentage.
1 minim.	16 grains or more.	3·33
2 minims.	8·00 grains.	1·67
3 "	5·33 "	1·11
4 "	4·00 "	0·83
5 "	3·20 "	0·67
6 "	2·67 "	0·56
7 "	2·29 "	0·48
8 "	2·00 "	0·42
9 "	1·78 grain.	0·37
10 "	1·60 "	0·33

The Method of Procedure.—Heat one drachm of the reagent in a test tube to boiling; add the urine slowly, drop by drop, until the blue color begins to fade; then more slowly, boiling three to five seconds after each drop, until the reagent is *perfectly colorless, like water*, or until ten drops only are added.

It will be noted after reduction that the reagent, on cooling, resumes the blue color again. This change is due to the absorption of oxygen from the atmosphere, changing the reduced suboxide held in solution to the blue protoxide again. This should not be mistaken for imperfect reduction or defect in the reagent. The change takes place quickly by shaking the tube, and the reduction can be repeated, if done immediately, before the evaporation of the ammonia by the addition of the saccharine urine as before, though not with the same degree of accuracy.

When a specimen of saccharine urine contains a large amount of albumin, the reduction takes place without interference by the albumin present, but leaves the reagent more or less of a yellow tint, according to the amount. A large amount of coloring matter has a similar effect, but there is little danger of uncertainty when not more than ten minims are used.

Most specimens of diabetic urine contain too much sugar for accurate testing without dilution with water. Take urine, one part; water, one to ten parts, as necessary; test with the diluted urine, and multiply the amount found by the table by the amount of dilution. Thus, if one minim of undiluted urine reduces the reagent, there may be 3·33 per cent. and maybe ten per cent. of sugar present. Add one part urine to water four parts, and if on testing we find that three minims of diluted urine make the reduc-

* Physicians can procure the reagent, accurately compounded as described, from the Lewis Chemical Company, No. 1300 Broadway, New York.

tion, there would be exactly 26·65 grains to the ounce, or 5·55 per cent. of the amount passed: 5 × 5·33 = 26·65 grains to the ounce; 5 × 1·11 = 5·55 per cent.

It is to be understood that when we say, if reduced by a certain number of minims of undiluted urine—as, for instance, seven minims—it contains 2·29 grains sugar to the ounce, it may possibly contain any fraction between 2·29 grains and the amount contained in six minims (2·67 grains). If it is desired to know the precise amount, dilute the urine with one part water, and it would prove the first test with fourteen minims 2·29, or with thirteen minims 2·46 grains to the ounce; or, if diluted with two parts water, it would show 2·29, 2·42, or 2·54 grains.

The foregoing table will determine the amount of sugar in any urine in quantity sufficient to have any clinical interest; less amounts than those given would be of physiological interest only, but can be just as accurately determined by adding to one ounce of the urine to be examined one third of a grain of lead acetate for each degree of specific gravity above 1·000, up to 1·024 if pale or 1·030 if high colored, which precipitates all albumin, phosphates, sulphates, chlorides, and coloring matter, but does not affect the dextrose; filter until perfectly transparent and colorless, and examine. This treatment should be given all dense urine loaded with uric acid, urates, and abnormal coloring matters, even when less than ten minims are required, if any doubt exists in the mind of the examiner about the reduction of the reagent.

Any shade of blue or green remaining in the reagent does not indicate sugar. The reduction with urine thus treated leaves the reagent colorless or of a light amber tint, according to the amount required. If no sugar is present, the blue or green tint is not wholly dissipated, even if the dilution is carried much higher than in the tables given.

For experimental use with prepared urine, or with distilled water with a known trace of glucose added, a continuation of the table is appended:

If reduced by	It contains to the ounce,	Percentage.
11 minims.	1·455 grain.	0·303
12 "	1·333 "	0·278
13 "	1·231 "	0·256
14 "	1·144 "	0·238
15 "	1·067 "	0·222
16 "	1·000 "	0·208
17 "	0·941 "	0·196
18 "	0·889 "	0·185
19 "	0·842 "	0·175
20 "	0·800 "	0·167

Experiments with the small traces, as shown in the above table, are of no particular clinical importance, for small traces of sugar, not continuous, would not indicate pathological changes, but show the delicate and sensitive nature of the reagent, and require the utmost care and precision in performing the analysis.

An easy proving of the accuracy and delicacy of the reagent may be made by carefully weighing with sensitive scales any amount of grape sugar desired, so that the number of minims of dilutant containing a thirtieth of a grain will correspond to any number in the first table. Use normal urine or distilled water for dilutant. Make the reduction as directed, and the number of minims required to reduce the reagent will indicate the exact amount and percentage.

In testing some urine a white or grayish cloud or precipitate will be noticed, which is due to the formation of cuprous urate, or the blue color may fade to a greenish tint; this is caused by the extreme dilution of the reagent or by uric acid, but is seldom shown unless more than ten minims are added. Either condition has no significance as regards the test for sugar. *There is no reduction of the reagent as long as any blue or green tint remains.* The aqua sapphirina test differs from the ordinary copper tests in the reduction which occurs being unattended with the precipitation of the reduced oxide as a yellow or orange-colored precipitate, the effect being simply a removal of the blue color, and when a sufficient amount of sugar is present for the complete reduction of the cupric oxide the solution is brought to a clear, colorless condition like water. Through this property of the reagent the gradually fading color can be observed, and the precise terminal point of the reduction is noted, which is recognized without the slightest difficulty.

The advantages possessed by this reagent are:

1. Accuracy.
2. Stability.
3. Simplicity.
4. Reliability.
5. Its perfect end reaction, whereby the most inexperienced may accurately determine the precise point of complete reduction without delay.

209 East Fourteenth Street.

PNEUMONIA.

By ORRICK METCALFE, M. D.

"Pneumonia is a self-limited disease, uninfluenced *in any way* by medicine. It can be neither aborted nor cut short by any means at our command." Is this the voice of disappointment and despair, or is it strictly true? Notwithstanding so much remains to be done, I think we must admit that much harm is done every day by injudicious medication, which hastens a fatal termination, and we have good reason for believing that judicious treatment averts that and has a decided influence for good. However, look as favorably as we please on what may be called the present treatment, it is very unsatisfactory and discouraging. What is undoubtedly beneficial in one case is not at all beneficial in another, while we remain in utter ignorance of the cause of failure in one case and of success in the other. By the adoption of a new treatment I hope it can be no longer said that "it can be neither aborted nor cut short by any means at our command." After twenty-seven years spent in work on this subject, I affirm with confidence that it can be cut short and rendered less dangerous. My experience has been such that I consider this point settled beyond dispute. The relief is so great and so prompt that to be convinced it is only necessary to witness the treatment, which is based upon the conception that the generally painful condition of the muscles correlated to particular parts of a lung is the cause of the congestion of the

lung. Having found out that manipulation restored the muscles to a healthy condition, it occurred to me to try it in the case of the muscles engaged in the act of respiration. Experiment proves beyond doubt that manipulation removes the pain, and in some way which I do not pretend to explain causes secretion of thin mucus, which softens the viscid, tenacious pneumonic sputum and allows it to be expelled, oftentimes in ten or fifteen minutes, thereby relieving the pain and making full respiration possible and comfortable, to remain so in some cases throughout the attack. I have found out that a very small, quick cough, assisted by a few deep inspirations which have been made possible by the manipulation, will start the phlegm better than a hard cough, which takes hold of it after it has been started. This is a matter of demonstration, not speculation. I have done it over and over again. So far from it being necessary, as advised by some authors, to keep the patient very quiet, even using opiates to secure this end, I find it agreeable to the patient and without risk to be enabled and allowed to lie on either side or to sit up, which I have never found detrimental in this disease. The ability to lie in any position is often the best proof that the manipulation has been effectual. I have said that in some cases the pain never interferes again with respiration, and such is the fact; but in a large majority of the cases the manipulation, accompanied by the expectoration, ought to be repeated twice a day for a few days. To satisfy himself as to the effects of the manipulation, it is only necessary to auscultate before it is done and afterward. Where there was the absence of the crepitant râle before the manipulation, said râle will be distinctly recognized after it. If a full inspiration does not produce the crepitant râle, keep the ear applied to the chest and make the patient cough, which he can now do with less pain and more force, and you will almost invariably get the crepitant, followed in a few minutes by the expectoration of the characteristic sputum, which is almost always preceded by the expectoration of thin, fluid mucus.

All who have had much experience in treating pneumonia know how important it is to recognize the disease early; not only to recognize it, but to relieve the patient. Instead of giving an opiate as I used to do, and waiting, maybe twenty-four hours, for the trouble to develop—and it does develop with a vengeance—I manipulate, and in fifteen or twenty minutes, sometimes less, I have proof positive, in the sputum, of the nature of the attack, and the patient has proof positive that he is better, because he can breathe more freely, cough with less or without any pain, lie on either side, and sit up in comfort. You not only find out positively what you are dealing with, but you relieve the patient, or, in other words, you *cure* him—I mean that—a means which does abort or cut short the disease has been found out. In speaking on this subject to a distinguished professor, he said it would take several hundred cases, if not a thousand, to convince him that the manipulation was the cause of the sudden improvement. To that I replied that I did not think it would, were he to witness the treatment. Some of my friends, to whom I explained my treatment, told me that where they had tried it, the pain and difficulty of breathing would return after the lapse of several hours. Suppose it does, as is often the case, a second manipulation and second expectoration (for in some cases there is no expectoration in the interval) bring greater relief than the first did. Where it is practicable, I like to manipulate twice in the twenty-four hours. Sometimes three manipulations will add to the comfort of the patient. I never now, as I used to do, give opium in any form to overcome the pain. After the pain has been removed and the expectoration started by the manipulation, I would rather have the patient cough than not. The advantage arising from the expulsion of the mucus which has been filling the alveolar recesses and occluding the fine bronchial tubes more than counterbalances any disadvantage arising from the cough and loss of rest. This is all very well so far as it goes, but what is to be done about that high fever, from 103° to 105°, and that splitting headache and quick pulse, as high as 125 beats to the minute? I disregard the pulse, knowing that it will come down when the breathing is easier, and so will the high temperature. When the fever is very high, say 105°, and the patient complains much of the heat, which is not always the case, I may give him two or three grains of antifebrin once or twice a day. But I hardly ever use any antipyretic—never so far as any controlling influence exercised over the inflammation of the lung. If a laxative is indicated, I prescribe it without any reference to the lung trouble. A friend asked me on one occasion what I did about what he called the third stage. I replied that there was no third stage when the trouble was arrested, cut short. How could there be? But it may be properly asked if there is always a painful spot. In answer to this I can positively assert that I have seen but one case where I failed completely to find a painful spot on palpation or when the patient coughed. It was a long time, though, before I found out—ten years, so slowly do ideas come to us—that acute soreness to the touch may exist without being known to the patient himself. Of course, I should not have been ten years in finding this out had my attention been confined to lung trouble. I think there is another great advantage in manipulation over all other kinds of treatment. Imagine a case where the alveolar recesses near the pleura are involved. Unrelieved, it is almost impossible that the pleura should not be speedily involved. This complication is to be deplored. Manipulation has taught me or made me think that the pleura is rarely involved at the outset.

In illustration, I will cite the case of a friend, about seventy years of age, who was seized with a severe pain in the left side, to the left of and below the nipple, at 10.30 or 11 P. M. With the assistance of mustard plasters he managed to get through the night, and sent for me very early the next morning. I found him in great pain, slight fever (101°), and pulse 95 to 100. The pain was the distressing symptom on coughing or moving. Nothing could be discovered on auscultation. That is, there was no appreciable dullness, and no râle of any kind, and very feeble respiration. Manipulation caused some distress, but lessened the pain in the side, so that a fuller breath could be taken. Then auscultation revealed

what I thought was a pleuritic friction sound. As his ability to breathe was improved, I concluded that, friction sound or no friction sound, I would manipulate again. I did not think I could be mistaken about the nature of the sound. But I was mistaken, and here is the proof. After the second manipulation I applied the ear to the same spot and heard apparently the same sound. While the ear was applied to the chest, I asked the patient to cough, and noticed that the sound was slightly changed in character and in position. I thought that could hardly be the case if it were a friction sound, but that it might well be the case if I had mistaken the sound caused by mucus in the alveolar recesses for the friction sound. After repeated manipulations and repeated coughs, the mucus was expelled characteristic of pneumonia. Then the pain was gone and the friction sound too.

Without manipulation how could that result have been reached, and so speedily? I do not know. Some may doubt that manipulation does it. But this has been demonstrated too often, and can be demonstrated at any time, for me to have any doubt about it. I will cite another case illustrating the same thing :

A young man, between thirty and forty years of age, came a distance of thirty miles by rail to see me with this history: Three weeks previously he was taken with a chill and severe pain at a point half way between the left nipple and the edge of the ribs. He sent for a doctor, who administered calomel and opium, and applied a blister over the seat of pain. He was relieved of the pain, but the fever lasted several days. He could not cough, and consequently had not expectorated. He came to me because he could not take a long breath, nor had he done so for three weeks. He had a weary, worn look. Auscultation revealed a very feeble respiration at the lower posterior portion of the left lung. Percussion showed considerably diminished resonance. There was no pain where the blister had been applied, nor was there complaint of pain anywhere. The only trouble, apart from inability to take a full inspiration, was the free emesis which took place after each meal. Now, what was the matter? Was it pleurisy with effusion or was it pneumonia? I chose to think it was pneumonia, convinced, if such was the case, I should find soreness in some muscle of which the patient knew nothing. I thought it likely that it was the abdominal oblique, and determined to manipulate it; fortunately for myself, and more fortunately for the patient, I had learned by this time that the muscles could be very painful to the touch without the patient being aware that there was anything the matter. I was right in selecting the abdominal oblique as the offender. It was very painful. It took just half an hour spent in manipulation and coughing to enable him to expectorate the characteristic sputum of pneumonia. The ability to take a long breath preceded the expectoration. As soon as he began to expectorate I left him in my office and was gone an hour. On my return I found he had got rid of a great deal of mucus, characteristic, and that there was no trouble in taking a long breath. He went from my office to an eating-house and took a full meal without any inconvenience. He continued to expectorate. The next morning, Thursday, his breakfast incommoded him some, but did not produce emesis. After the second manipulation his stomach gave him no further trouble. Thursday and Friday the expectoration was free and of the same character. On Saturday it was much less, on Sunday it ceased, and on Monday he returned to his home and had no further trouble.

Could this have been accomplished in any other way?

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. APPLETON & CO. Edited by FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, JANUARY 25, 1896.

CERTIFIED MILK.

A most laudable undertaking, that of ascertaining and certifying to the quality of milk furnished for sale by certain dairymen, is being carried on by a medical milk commission of Essex County, New Jersey. The commission consists of Dr. George A. Van Wagenen (chairman), Dr. Henry L. Coit, Dr. Theron Y. Sutphen, and Dr. L. Eugene Hollister, of Newark, Dr. William Pierson, Jr., of Orange, Dr. William B. Graves (secretary), of East Orange, Dr. James S. Brown, of Montclair, and Dr. Charles H. Bailey, of Bloomfield. The members of the commission disclaim any pecuniary interest in the sale of the milk to the character of which they certify, and assume no obligation further than that of enforcing the contracts made with them by dairymen and that of publishing among the medical profession the results of the investigations made by the chemist, the bacteriologist, and the veterinarians employed by them. In the contract the dairyman agrees to pay for the chemical and biological examinations of the milk and to defray the cost of bi-monthly inspections of his dairy stock.

The examiners employed by the commission are the following: Professor Albert R. Leeds, Ph. D., chemist; Rowland G. Freeman, M. D., bacteriologist; Professor Alexander Liautard, M. D., D. V. S., William B. E. Miller, D. V. S., and Walter Runge, D. V. S., veterinarians, Professor Liautard serving in a consulting capacity. These gentlemen make reports to the commission in writing, and the commission passes upon them. The specimens of milk are delivered to the commission, and issued by it to the chemist and the bacteriologist. The chemist's report gives the specific gravity of the milk and an analysis showing the percentage of water, that of the total solids, and those of the fat, lactose, and albuminoids contained in it, also the percentage of ash. The bacteriologist examines the specimen for micro-organisms and states whether or not he finds it in accord with the commission's requirements. The veterinarians visit the dairy and investigate the physical condition of the animals and their hygienic treatment, the quality and amount of food given to them, the quality of water supply from all sources, the sanitary condition of the stable and of the surroundings, and the hygienic state of the attendants. They also determine what feed and fodder shall be given to the cows and in what quantities.

From the perusal of a printed report issued by the commission, giving the details of the examinations in the case of a certain dairy, we can only conclude that the work is done systematically, intelligently, and honestly. If contracts are

made between the commission and a fair number of large dairy proprietors, the people of the region supplied with this certified milk ought to be sure of receiving an unobjectionable product, and their physicians aided most materially in guarding them from disease due to defective, adulterated, or contaminated milk. There are few directions, if any, in which ordinarily the health of a community, and especially that of its infant population, can be more efficiently promoted than in that of insuring that the milk supply shall constantly be rich and sound, and the work of the milk commission should be emulated in other parts of the country. We are confident that in almost every region of the United States competent examiners may be found ready to serve such commissioners.

MINOR PARAGRAPHS.

THE MARINE-HOSPITAL SERVICE.

The *Annual Report of the Supervising Surgeon-General*, Dr. Walter Wyman, recently issued, is for the fiscal year ending on June 30, 1894. It is a volume of nearly four hundred pages. It is rich in matter of interest from the medical point of view and from that of the welfare of the service, both of which are so interwoven, and it is rendered unusually attractive by illustrated descriptions of the hospitals, the quarantine stations, and the disinfecting appliances.

SYNTHESIS PERSONIFIED.

The *Berliner klinische Wochenschrift* for December 23d is amused to find in a Berlin letter to an American medical journal the statement that cocaline, a proposed artificial substitute for cocaine, is "made by Synthesis, a German manufacturing chemist." We find that the letter referred to appeared in the *Medical and Surgical Reporter* for October 5th, and that it is signed Theophilus Parvin. Dr. Parvin's humor is apparently so subtle as to have escaped our German contemporary.

A PASTEUR SOCIETY.

We learn from the *Journal des praticiens* that a *Société pastorienne* has been formed, having for its objects the building and management of establishments in Paris for the hospital treatment of patients by the application of the methods in use at the Pasteur Institute, the general diffusion of those methods, and, to that end, the acquisition of real estate in Paris, particularly a large property on the rue Dutot.

THE PROPOSED LEIDY FELLOWSHIP.

The proposal to establish a Leidy fellowship in anatomy at the University of Pennsylvania, the terms of which are set forth elsewhere in this issue of the *Journal*, will, we are sure, meet with only one feeling among the profession, that of satisfaction at the prospect that Joseph Leidy's great services are to be commemorated fittingly and to such a useful purpose.

ITEMS, ETC.

The Influence of Ventrofixation of the Uterus on Pregnancy and Labor.—Dr. Charles P. Noble, of No. 1637 North Broad Street, Philadelphia, asks for the experience of the profession in the following circular:

"Having recently had some unfortunate experience concerning the influence of suspensio uteri upon parturition, I feel that it is highly important that this question be settled in an authoritative way as soon as possible. The only way to determine the question is by studying the actual results as seen in the practice of all operators. I shall be much indebted to any one having had a case of pregnancy following suspension of the uterus, if he will communicate the details of the case or cases to me."

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending January 21, 1896:

DISEASES.	Week ending Jan. 14.		Week ending Jan. 21.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	13	2	5	4
Scarlet fever	211	19	179	25
Cerebro-spinal meningitis	2	2	3	3
Measles	302	23	345	20
Diphtheria	314	38	298	47
Small-pox	1	0	0	0
Tuberculosis	76	105	183	118

A "Doctors' Night" at a Boston Club.—On Thursday evening, the 16th inst., the Merchants' Club, of Boston, entertained a number of physicians of the city. The speakers were Dr. Maurice Richardson, Dr. H. L. Burrell, and Dr. Clarence J. Blake.

The New York State Medical Association.—The twelfth annual meeting of the Fifth District Branch will be held in Brooklyn on Tuesday, May 26th. Fellows desiring to read papers are asked to notify the secretary, Dr. E. H. Squibb, P. O. Box 760, Brooklyn.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from January 12 to January 18, 1896:*

Kennedy, James M., First Lieutenant and Assistant Surgeon, is relieved from duty at Camp Merritt, Montana, to take effect upon the expiration of his present leave of absence, and ordered to Fort Missoula, Montana, for duty.

Glennan, James D., Captain and Assistant Surgeon. The leave of absence granted him is extended one month.

Society Meetings for the Coming Week:

Monday, *January 27th:* Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore Medical Association.

Tuesday, *January 28th:* Medical Society of the State of New York (first day—Albany); New York Dermatological Society (private); Buffalo Obstetrical Society; Medical Society of the County of Putnam (quarterly), N. Y.

Wednesday, *January 29th:* Medical Society of the State of New York (second day); Auburn, N. Y., City Medical Association; Berkshire, Mass., District Medical Society (Pittsfield); Middlesex, Mass., North District Medical Society (Lowell); Gloucester, N. J., County Medical Society (quarterly).

Thursday, *January 30th:* Medical Society of the State of New York (third day).

Saturday, *February 1st:* Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society, New York (private); Miller's River, Mass., Medical Society.

Births, Marriages, and Deaths

Married.

KOYLER—BARNES.—In Buffalo, N. Y., on Wednesday, January 15th, Dr. Frederick Koyler, of Wellsville, N. Y., and Miss Emma Barnes.

LANDRY—GRANT.—In Helena, Ark., on Wednesday, January 15th, Mr. Leonce Landry and Miss Lillian Henrietta Grant, daughter of Dr. H. M. Grant.

Died.

ADAMS.—In Phœnix, Ari., on Tuesday, January 21st, Dr. Oliver B. Adams, of Ogden, Utah, in the sixty-second year of his age.

BURGESS.—In Moosup, Conn., on Sunday, January 19th, Dr. Frank S. Burgess.

COLGAN.—In Brooklyn, on Tuesday, January 21st, Mrs. Mary J. Colgan, mother of Dr. J. J. Colgan.

GARTZMAN.—In New York, on Friday, January 17th, Dr. Gustav Gartzman, of Newburgh, N. Y.

GREENMAN.—In Troy, on Monday, January 20th, Harold Bleecker, only child of Dr. C. E. Greenman.

HAYNES.—In Gloster, Miss., on Friday, January 17th, Dr. S. B. Haynes.

RANDALL.—In Rehoboth, Mass., on Friday, January 17th, Dr. George H. Randall, in the seventieth year of his age.

REMSEN.—In New York, on Saturday, January 18th, Dr. Robert G. Remsen, in the seventy-fifth year of his age.

ROBINSON.—In Paso Robles, Cal., on Monday, January 20th, Dr. Somerset Robinson, Naval Inspector, U. S. Navy (retired).

Letters to the Editor

THE ACADEMY OF MEDICINE AND THE MINOR HOSPITALS.

NEW YORK, *January 7, 1896.*

To the Editor of the New York Medical Journal:

SIR: In the late editorial, in the issue of January 3d of the *Journal*, bearing on the late hospital reorganization and the Academy of Medicine, there are some inaccurate statements made which, in common justice to the profession and the *Journal* as well, should be corrected.

It may be said at the outset that this action in bringing this matter before the academy at all was first inspired by an editorial in your *Journal*, in which it was stated that it would seem a proper subject for consideration by that body.

All must agree that the resolutions met with the fate they richly deserved, inasmuch as they consisted of little else than meaningless platitudes, and failed to touch on the vital question at issue, the peremptory dismissal of more than fifty hospital physicians, and the prompt filling of their places by the medical schools.

Now, to the action of the Academy of Medicine. It is stated in the *Journal's* editorial that there were 200 members present at the meeting when action was taken on the resolutions; while the fact is that the number registered in all was 161. Of this number 108 voted against the resolutions and 47 for them. Six declined to vote or left the room. Of the former was the president of the academy, Dr. Joseph D. Bryant. On analysis of the 108 votes against the resolutions it has been found that 72 were members of the faculties—for these were there in force—assistants, or those occupying places in their gift, and others were among the "cast outs" returned to service, thus leaving but 36 among this number unfettered by college connections in the general academy membership of 647 active members. No *viva voce* vote was taken, as asserted, or any other, except from the register. Therefore the vote stood rather *two* to one than "three to one."

That the summary expulsion of physicians from hospital service was not the only just cause of complaint will soon be announced in such terms as will leave no grounds for misapprehension by the profession at large.

Justitia's attitude in this affair yet remains unshaken. Facts are stubborn things. It will not do for representatives of any of the three schools to try to wash their hands out of this reorganization scheme, for proofs will soon be forthcoming which will expose the facts in their true light.

Early in June last a committee of the New York County Medical Association addressed a communication to each of the three medical colleges, requesting them to delay action in nominating candidates for the Harlem Hospital service until charges were tried. Not one of the colleges sent a response to this, their only answer being a clean sweep in all the hospitals. The allegation that the commissioners had for years contemplated this change and wished the medical schools to assist them is entirely without foundation. That one member of the late board of commissioners was in favor of such action is admitted. But he has been retired by the mayor, and the way is now clear for a reopening and thorough investigation of the late reorganization, an adjustment of which will not be accepted as satisfactory by the profession at large, who have some interests as well as colleges, until it is extended to the *major* hospitals, and at least one half of *all* city hospital medical service is opened to the large number of those thoroughly trained to take charge of any arm of the service.

JUSTICE.

*** We aimed only at stating the vote in round numbers; on that point we are quite willing to accept "Justice's" correction. He is mistaken, however, in supposing that there was no *viva voce* vote.

Proceedings of Societies.

TRI-STATE MEDICAL SOCIETY OF ALABAMA, GEORGIA, AND TENNESSEE.

Seventh Annual Meeting, held in Chattanooga, Tenn., on Tuesday, Wednesday, and Thursday, October 8, 9, and 10, 1895.

The President, Dr. R. M. CUNNINGHAM, of Birmingham, Ala., in the Chair.

Tuberculosis.—This was the subject of the president's address, which was based on his experience in the prisons of Alabama. The statistics showed, he said, the great predisposition of the negro to tuberculosis, which might be explained as follows: 1. Since his emancipation the negro had acquired a predisposition to tuberculosis, which was hereditary. 2. A greater liability to diseases which predisposed him to tuberculosis, especially bronchial and intestinal catarrh and pleurisy. 3. He was physically, mentally, and morally inferior to the white man; therefore he was more likely to contract disease, particularly tuberculosis and thoracic diseases. 4. His changed social, religious, political, and industrial relations. 5. His disregard of all rules of sanitation. The greatest mortality occurred during the ages of from twenty to thirty years. Diarrhœa, said the author, was a factor in the disease, for in one of the prisons nineteen deaths

had been caused by tuberculous peritonitis which had followed an epidemic of diarrhœa. This, he thought, proved that intestinal catarrh predisposed a patient to tuberculosis of a peritoneal form. The causes of tuberculosis, he said, were, essentially, the tubercle bacillus, an inherited predisposition, and an acquired constitutional or local predisposition. Predisposition alone never produced the disease. Primarily, it was the result of inoculation from without, and, as a rule, it was a local infection producing chronic local changes, the general and acute forms being due to self-infection. In general acute miliary tuberculosis the lungs, the peritonæum, the spleen, and sometimes the liver, but rarely the kidneys, were involved, the patient dying before the caseous stage set in. These cases frequently followed pleurisy after a large amount of fluid had been withdrawn. In the chronic general form the process involved the same organs, but the infection was not so widespread, the caseous stage was often reached, and local and inflammatory lesions were generally found. In both forms there might be an active tuberculous inflammation which developed in some organ and terminated rapidly. The bacilli were distributed by the circulation. The acute forms, he said, were the result of general self-infection from a chronic tuberculosis which might not have been suspected.

Dr. H. Berlin thought that the reasons the disease prevailed to such an extent in the prisons were that they contained germs, and that the convicts were usually in a weakened condition; another important factor was the dust inhaled by the prisoners, which, under the microscope, showed sharp corners which cut the tissue and admitted the bacilli.

Dr. C. Holtzclaw had noticed the frequency of tuberculosis in county institutions. The greater liability of the negro to the disease, he said, was due to the fact that, unlike the white man, he had not acquired an immunity from long contact with the disease.

Dr. J. B. Murfree did not indorse the idea that diarrhœa induced the disease, except as it weakened the patient. While the bacillus was the cause, he thought that predisposition was an equally important factor.

Dr. G. A. Baxter differed with Dr. Murfree in regard to diarrhœa as a factor in the causation of the disease. It made an entrance, he said, for the bacilli through abrasions. One agent of the disease was food, and especially milk. In China tuberculosis was unknown, and this was attributed to the fact that milk was not used.

Dr. Cunningham said that dust produced a fibroid phthisis, but did not produce tuberculosis, though it might predispose a patient to the disease. He had not found typical tuberculosis in the negro, but believed that the race had acquired a predisposition to the disease. He thought that diarrhœa predisposed a patient to the disease by abrading the mucous membrane and giving an opportunity for the entrance of the germs.

Pseudo-hypertrophic Muscular Paralysis.—Dr. G. Manning Ellis, of Chattanooga, read a paper thus entitled, and exhibited a patient who showed the characteristic symptoms. The muscles seemed large and the gait was oscillating. Although apparently healthy and well developed, the patient seemed weak, and the difficulty in locomotion had increased. The peculiar gait, the manner of rising by placing the hands on the knees and climbing up on the thighs, the lordosis, the absence of tendon reflex, and the diminution in the size of the muscles of the legs, which came after the enlargement, were characteristic of the disorder. The upper extremities showed the enlarged intraspinatus and the decrease in size of the latissimus dorsi, which had produced an absence of the axillary fold.

Dr. Willis F. Westmoreland, of Atlanta, reported two cases where there had been adherent prepuce. In one case an operation had been performed at a late stage of the affection, but with no beneficial results. He thought that if there was irritation from this cause, an operation before the disease began would be of benefit.

The Management of the Placenta.—Dr. J. B. Murfree, of Murfreesboro, read a paper on this subject in which he maintained that, as soon as the child was born, Credé's method should be employed. If the placenta did not come away in twenty minutes, gentle traction should be made on the cord. Undue force should not be used. If this did not succeed, and especially if the placenta presented centrally, the hand should be introduced into the uterus and the edge freed from its attachments. If the placenta was extracted as soon as the child was born it would leave the mouths of the blood-vessels open. Exactly when to remove the placenta could not be definitely stated in every state; generally, practitioners waited too long.

Dr. R. R. Kime did not agree with the author in advising the introduction of the hand into the vagina unless other means had been exhausted. He preferred wrapping the cord around the first two fingers of the right hand and following it up to the placenta, then by pressure on the placenta and gentle traction on the cord it would usually slip out. He objected to the use of ergot in obstetric practice.

Dr. W. G. Bogart removed the placenta as soon as he had tied the cord. He grasped the fundus and squeezed the placenta out if possible. If he was not successful, he introduced two fingers into the uterus and grasped the edge of the placenta and made a rotary motion, with the other hand still on the fundus. He never made traction on the cord, as he considered it dangerous. Ergot should not be given to expel the placenta. The important point was to get all the placenta away. He had no fear of putting his hand into the uterine cavity if it was thoroughly clean, and he did not think it necessary for this reason to use an intra-uterine douche.

Dr. Preston Scott thought that the placenta should not be detached too hastily; time should be given for tonic contraction. Gentle traction should be made on the twisted body of the placenta. He had excluded ergot from his practice altogether. He used the hot-water douche to promote contraction.

Dr. J. P. Stewart stated that he waited an hour if necessary, provided there was no hæmorrhage. If the placenta was in the vagina, it should be extracted at once, as it acted as a foreign body.

Dr. J. B. Cowan thought that there was a happy medium between twenty minutes and an hour. He assisted Nature during the pains, and, if necessary, he put his hand into the uterus. Post-partum hæmorrhage could be prevented, he said, by steady pressure on the fundus kept up for an hour if necessary. He never pulled on the cord.

Dr. Murfree said that ergot was likely to produce hour-glass contraction, and he thought that there could be no harm in introducing the hand into the uterus.

Tracheotomy for Foreign Bodies; Cystotomy for Stone.—Dr. Willis F. Westmoreland reported twenty-seven cases in which operations for foreign bodies had been successful. In all, the first ring of the trachea had been cut and the opening enlarged. He had operated as early as possible. The external incision had been made large and the muscles had been separated and the fascia divided. When necessary, the isthmus of the thyreoid gland had been divided and ligated, and the blood-vessels had been ligated, so that no forceps had been used. No tenaculum had been used in the

trachea. Instead of using a trachea forceps, the opening had been held apart with silk introduced by a needle which had no cutting edge. The foreign bodies had not been probed for, but, when necessary, the wound had been left open. The mucus would, he said, sometimes prevent closure of the wound. In closing the latter, the tissue under the mucous membrane had been brought together with silk and the Halsted or mattress suture. In this way the layers had all been brought together.

In cystotomy for stone, he said, he avoided rectal dilatation and employed hydrostatic pressure to distend the bladder, raising the water to a height of two feet. This, he said, caused the bladder to bulge through the opening. No tenaculum was used to steady the bladder, but it was held with two artery forceps, between which the incision was made as high as possible. After removing the stone and flushing the bladder it was closed with the Halsted suture and the closure tested by raising the water for an instant to a height of three feet.

Dr. G. A. Baxter indorsed the author's opinion in regard to this operation, although he preferred the medio-lateral operation.

Dr. J. A. Goggans thought that suprapubic cystotomy was the operation *par excellence* for stone. He was prejudiced against the low operations, as he had once been called upon to sew up a large fistulous opening between the bladder and the rectum. He had attempted to sew up the opening with silkworm gut, operating through the rectum. At the third operation he had divided the sphincter-ani muscle and almost closed the fistula.

Dr. W. E. B. Davis, of Birmingham, thought it well to leave the wound open for drainage, for there was always disease of the bladder, and a new stone might form in a few weeks.

Dr. R. J. Trippe said that his experience had been limited to a few cases. He advocated leaving the wound open for drainage. As a guide he used a sound; he filled the bladder with water and washed it out before the operation. With regard to tracheotomy, he stated that he used a long scissors forceps, and did not stop to ligate the blood-vessels. The forceps held the wound open so that the services of an assistant were not required.

Dr. Westmoreland advocated cutting high in suprapubic cystotomy, as the bladder was near the surface. The tenaculum should be avoided, as the urine might pass through the small opening. The buried silver wire was used, owing to the fact that it took several weeks for muscular tissue to unite, and no other suture would last that length of time. It would make no difference, he said, if the peritonæum was cut in the high operation; in these cases the wound was not left open, as there was no disease.

Early Diagnosis and Vaginal Hysterectomy in Cancer of the Uterus.—Dr. J. A. Goggans, of Alexander City, Ala., read a paper with this title, and dwelt on the importance of prophylaxis, early diagnosis, and early operative treatment by vaginal hysterectomy.

The Treatment of Malignant Cutaneous Epitheliomata (Cancers).—This was the title of a paper by Dr. A. R. Robinson, of New York. In cases, he said, where the diagnosis was not positive iodides and mercury should be used. The elements extended much farther than was generally supposed, and when the growths were excised pathological cells were left, and there would be a recurrence when the wound was treated antiseptically. Suppuration should be encouraged, as the toxine of the pus was more destructive to the epithelioma cells than the erysipelas toxine. He opposed cutting, and advised the use of caustics. The toxines had cured no patients, although some might have been benefited. The caustics should destroy the tissue quickly and thoroughly, and mild caustics, such as silver nitrate, should not be used. Caustic potash liquefied as much tissue as could be removed with the knife; beyond this there was an inflammatory exudation which destroyed the pathological elements. The cancer cells might extend deeper than could be reached with the knife, and for this reason the potash was preferable. There was also less deformity following its employment than that of the knife. Zinc chloride, he said, acted more slowly and was suitable only in certain parts, near the eye, for instance, and in the papillary form previous to the use of arsenious acid. Pain might be avoided by mixing it with a twenty-per-cent. solution of cocaine. Arsenious acid had a more elective action on the cancer cells, and should, as a rule, be used in weaker proportion than in Marsden's paste. One part of gum arabic to one part of the acid might be used, and it would not attack the normal tissue under twenty hours. It should then be removed and, if there was not sufficient necrosis, it should be applied again and allowed to remain for sixteen or eighteen hours. These cases should be watched for a year or two, as there might be a reappearance of the disease. Arsenious acid might be applied to the lips if care was taken to prevent it from getting into the mouth; on the nose it was especially valuable, as it did not cause deformity.

Dr. Kime thought it was unfortunate that cancer of the uterus was not diagnosticated early. Often, he said, the symptoms were not well defined and were very insidious; sometimes they were not detected until the disease was so far advanced as to preclude operative measures. Every physician, he said, should insist on a proper examination of all women who presented symptoms or indications of cancerous disease at the time of the menopause.

Dr. Davis thought that these cases were overlooked because they were so insidious in their development. Every patient with a diseased cervix should be treated and cured. He advised the removal of the uterus and of the appendages for cancer.

Dr. Goggans said that wherever there was cancer there was irritation. Hence the necessity of removing every source of irritation and every pathological condition as a prophylactic measure.

Hæmorrhoids.—Dr. J. P. Stewart, of Atlanta, read a paper on this subject in which he dwelt on the necessity of an examination under chloroform in some conditions. Where the tumors were small he used a solution of red gum as an injection into the rectum, but if they were large, he destroyed them with the clamp and cautery.

Dr. R. P. Johnson stated that he had successfully employed injections of carbolic acid in the proportion of two parts of acid to one part of olive oil; to each injection he had added a fourth of a grain of morphine.

Dr. J. B. Cowan alluded to the new operation of excising all the hæmorrhoidal tissue, and stated that these cases often fell into the hands of quacks who injected carbolic acid, which gave temporary relief. He liked the old method of tying the tumors. In bad cases where there had been no distinct tumors he had caught the tissue with a tenaculum and had tied it, putting in as many as fourteen ligatures, and the result had been perfect.

Dr. Kime said that many hæmorrhoids could be dissected out entire and the wound closed by over-and-over catgut stitches with excellent results, leaving no raw surface to granulate.

Dr. Baxter thought that the treatment should be varied

in different cases. Carbolic acid he considered dangerous. He thought we could not make a satisfactory examination without paralyzing the sphincter. He stated that he had always been able to find a distinct tumor.

Synthetic Perinæotomy in Lacerations of the Perinæum.—Dr. R. R. Kime presented this paper, and said that he used this term to designate a method of dividing and dissecting without loss of tissue. The redundancy was due to hyperplasia, a subinvolution which would disappear when the cause of the laceration was removed. The method was described in detail and cases were cited.

Bile in the Peritoneal Cavity, and How to Deal with it.—Dr. W. E. B. Davis presented an experimental and clinical study of this subject in which he stated that experiments confirmed the position he had taken before the American Medical Association in 1892. The constant extravasation, he said, produced peritonitis unless there was satisfactory drainage. A considerable quantity could be walled off, just as any other irritating fluid could. It had been observed that, when gauze had been packed around the openings in the gall bladder or the ducts, the animal had recovered as a rule. The field of operation had generally been walled off completely, and there had been no evidence of general peritonitis. Many of them had been reopened twenty-four or forty-eight hours afterward, and this condition had been found. He maintained that, in obstruction of the common duct—if it was due to stone—an incision should be made, the obstruction removed, and drainage established without an attempt being made to close the opening, as in these cases the patients could not stand a long operation.

Appendicitis.—This was the subject of a paper by Dr. R. J. Trippe, of Chattanooga. He reported several cases which illustrated the necessity of early operation, also the fact that some patients died, no matter when they were operated upon or by what method.

Dr. Kime thought that in many cases the patients would recover without an operation, but that it was very difficult to determine which these cases were. By the use of salines and disinfectants many patients could be relieved by unloading the colon, relieving the hyperæmia, and establishing drainage. If a patient progressed satisfactorily for some days and then suddenly became seriously worse, an operation should be done without delay. He did not think it prudent to attempt to remove the appendix when an abscess cavity was opened which was walled off from the general peritoneal cavity.

Dr. C. Holtzclaw had had fifteen or sixteen cases of appendicitis in which he had not operated. The patients had recovered after applications of ice over the inflamed area. Operations, he thought, should be performed if there was any evidence of suppuration, elevation of temperature, or collapse.

Dr. Baxter said that the danger was not in an operation, but in delay. The question lay in the diagnosis between obstructive and catarrhal inflammation. When there was a distinct enlargement and induration there was obstruction.

Dr. Cunningham stated that in a large number of cases, on post-mortem examination, the appendix had not been found inflamed once in a hundred times, and he thought an operation was indicated where there was pus, swelling, or induration.

Dr. J. P. Stewart said that he had always cured his patients with salines. He related the history of a case of injury to the gall duct followed by distention of the gall bladder, in which he had aspirated, and in three days had got eight pints of fluid. The obstruction had then given way and the same fluid had passed through the rectum.

Dr. J. B. Murfree thought that no operation should be done unless there was some indication, such as recurrence or great local changes.

Dr. P. D. Sims said that he did not recall a case of death from appendicitis in which there had been no operation. It might be required, but swelling and obstruction, he thought, did not indicate an operation.

Dr. R. H. Hayes stated, with regard to appendicitis, that Tclamon, of Paris, had published statistics giving from ninety to ninety-five per cent. of recoveries without operation. An English author had also given similar statistics, but whether they were reliable or not he could not say. Many persons thought that when they had an attack of appendicitis it was a constant source of danger, and a few years ago this had been the main indication for operation, and, from this point of view, it seemed, he said, that the operation should be performed at any opportune time.

Dr. Davis thought that Dr. Stewart's case had not been one of distention of the gall bladder, but that a cyst had formed, and that the patient had been saved by the operation. The after-treatment was the same as in other cases of abdominal surgery. He thought that cases of catarrhal appendicitis were common.

Acromegaly.—Dr. J. R. Rathmell, of Chattanooga, read a paper on this subject and reported a case in which there had been two uncommon symptoms in addition to those usually observed. These had been long-continued deviation from the respiratory rhythm, of the Cheyne-Stokes variety, and inability to retain food or drink. Both symptoms, said the author, had been accounted for by the enlarged pituitary body, which weighed four hundred and seventy-five grains. The author believed the disease to be due to trophic trouble, which produced changes in the bony system, especially in the feet, the hands, and the face, and that the enlargement of the pituitary body and of the other ductless glands was the result, not the cause, of the disease.

Dr. W. C. Townes, of Chattanooga, reported a case a marked feature of which had been that, although the patient was fifty-two years old, there had been no impairment of the sexual function. He believed that the disease was due to the pressure on the brain produced by the enlarged pituitary body.

Dr. W. G. Bogart thought that these cases were rare. He had seen Dr. Rathmell's case, in which the enlarged tongue had made articulation difficult and the labored breathing had given evidence of suffering. The points of interest, he said, were the length of time required for the development of the disease, which had been fourteen years, and the question as to whether anything could have been done if the diagnosis had been made early.

Dr. E. A. Cobleigh asked if it was not possible that the condition was a persistent accentuation of a normal process.

Dr. Rathmell said that the first evidences of the disease were loss of strength and enlargement of the extremities. He believed it to be a disease of the osseous system, and the line of treatment was to build up the system, with the employment of electricity, which, in his experience, had given good results.

Water versus Atmosphere the Cause of Malignant Malarial Fever.—Dr. J. B. Cowan, of Tullahoma, related the histories of cases in which water from clear springs had evidently been the cause of malarial fever. In almost every instance where well water and spring water had been abandoned for cistern water malarial fever had disappeared. In a village which was supplied by well water all the inhabitants had been taken sick, with the exception of one family, who had used other water. So many instances of a like nature had

come under his observation that he had invariably changed the water in such cases. If sterilized water was used, he said, malarial fever would be unknown.

Dr. E. T. Camp did not agree with the author that malarial disease was contracted through water alone; some of the poison might be so absorbed, but he thought that in the tropics it was mainly by sleeping in the open air that the disease was contracted.

Dr. Bogart thought that water was one of the means of introducing the poison into the system, but there were others.

Dr. Y. L. Abernethy stated that when there was a wet summer there was not much malarial fever. Dr. Cowan's paper, he said, seemed to prove conclusively that the disease was introduced by water, but, he asked, Why do we not have it every year, and why do we not have it all the time? The old theory had been that it was due to heat, moisture, and decomposition. Bowling's theory was that it was due to water which had been confined so as to prevent evaporation. At the present time it was said to be due to a germ. However, whichever theory was correct, he said, it was true that nineteen twentieths of the diseases of the West and of the South were due to malarial infection.

Dr. Cowan stated that the reason the disease did not appear every summer was that the heat did not develop the germ. He thought that all cases of malignant malarial fever were due to drinking water. In some parts of the South where the disease had formerly been prevalent, but was now unknown, it had been due to the use of cistern water.

The Prevention of Small-pox.—Dr. J. Berrien Lindsley stated that a fourth of the population of Tennessee had not been vaccinated. Doctors, he said, were not willing to acknowledge their inability to diagnosticate small-pox; hence mistakes occurred. In Little Rock the disease had been under way six weeks before its nature had been discovered. A rule of sanitary boards was, in case of doubt, to give the public the benefit of the doubt and to isolate the patient. All suspicious persons should be sent to some public institution. He related several cases where small-pox had not been diagnosticated, and the result had been that the disease had spread and caused death.

Dr. H. Berlin thought that the micro-organism of small-pox had not yet been discovered. He stated that in the Franco-Prussian war more French soldiers had died from small-pox than had been killed in battle, and that the disease had been unknown in the German army because the soldiers had been vaccinated.

Dr. Lindsley thought that small-pox was to be feared because of the neglect of vaccination, and he thought that the medical profession did not do its duty in the matter of insisting upon vaccination.

The Nucleins and their Relative Position in Sero-therapeutics.—Dr. R. H. Hayes, of Union Springs, Ala., read a paper with this title in which he said the nucleins were protoplastic or bioplastic cell substances, the bioplastic or primal unit of the organism; a proteid granular cell-life substance with vital energy and resistant force, through which all animal nutrition took place. These nucleins were in the tissue cells and in certain forms of yeast. The former were taken from the blood and the lymphoid glands of the body, principally from the multinuclear blood corpuscles, or leucocytes, the proliferation of which they had the power of increasing. They were natural defenders capable of arresting and overwhelming all alien or disease germs as they entered the blood stream. There were three forms: Nuclein solution from yeast; nuclein solution from the tissues of the body, such as the thymus, the thyreoid, the liver, and the spleen; and the protonuclein from the tissues directly. The principal difference, said the author, between the antitoxines and the toxines was that the toxines were antidotal or antagonistic to the poison or ptomaines formed by the presence of alien or disease germs; they belonged to the class of albumin serums and attacked the germs directly as soon as they reached the blood stream. The nucleins were more direct, although less powerful, and they had the advantage of attacking through the leucocytes any or all germs which entered into the system. Dr. Hayes related a case of ulcer of sixteen years' standing in which the patient had been cured in four months with the use of nucleins, and he thought there should be a more general application of the nucleins.

The Treatment of Diphtheria.—Dr. R. P. Johnson, of Chattanooga, read a paper and gave his experience with established methods, especially with the use of benzoate of sodium. He read a letter from Professor Klebs, who did not speak favorably of the antitoxine treatment, but maintained that better results were obtained from the employment of antidiphtherin.

Dr. Baxter thought that the danger was from sepsis and that the germs were under the membrane, and could not be reached by local measures. Where death was from obstruction, which might extend to all parts of the lungs, no agent would liquefy the membrane rapidly enough.

Dr. George Thrash stated that Professor Klebs had read a paper on this subject before the medical profession in Asheville, in which he had not expressed himself enthusiastically in regard to the serum treatment.

Dr. Abernethy said that the membrane was not dangerous until it got into the trachea, and then the patients died. Tracheotomy was generally a failure.

Book Notices.

A System of Surgery. By Various Authors. Edited by Frederick Treves, F. R. C. S., Surgeon to and Lecturer on Surgery at the London Hospital, etc. Vol. I. With Two Colored Plates and 463 Illustrations. Philadelphia: Lea Brothers & Co., 1895. Pp. xxxi–1152.

Since the publication of Holmes's *System of Surgery* the present is doubtless the most important work on the subject that has been produced in Great Britain. The editor is well known throughout the surgical world through his *Manual of Operative Surgery* and his many contributions to periodical medical literature. His collaborators are many of them men of equal fame and have been chosen with careful regard for their fitness to treat of the subjects assigned to them.

The present volume is devoted largely to the fundamental principles upon which the modern practice of surgery is based. Mr. German Sims Woodhead, in the first chapter, covers the ground of surgical bacteriology in a most concise and pleasing manner. The text of this article is all that could be desired by the practical surgeon, but there is a marked deficiency in the illustrations. The chapters following, on inflammation, suppuration, ulceration, and gangrene, by Mr. W. Watson Cheyne, contain complete and instructive expositions of the subjects, and may be described as classical. The same may be said of his article on wounds and contusions.

Mr. C. B. Lockwood treats of erysipelas, pyæmia, tetanus, and tetany. We are surprised to see no mention made of the application of erysipelas toxine in the treatment of sar-

coma and carcinoma. Doubtless the author believes that the proper place to discuss this subject is under the treatment of malignant tumors.

One of the most interesting chapters in this volume is that by Mr. Treves, upon the influence of constitutional conditions upon injuries. This is a subject upon which many good surgeons are little informed. To properly estimate the probable results in any given case of traumatism or surgical operation, it is necessary to be well informed as to the influence of the patient's constitutional diathesis upon such conditions. Mr. Treves has made a careful study of this subject and has embodied much useful information in the brief chapter mentioned.

The article on anæsthesia, by Mr. T. W. Hewitt, is brief and to the point. He departs from the views generally held by English surgeons, and gives ether the preference over chloroform in almost all cases in which nitrous oxide is inapplicable. He makes the statement that *patients with advanced renal disease may be safely anæsthetized by ether, provided that other morbid conditions contraindicating this anæsthetic are absent.*

Syphilis and gonorrhœa are treated of by Mr. Jonathan Hutchinson, whose name is familiar to every student of genito-urinary diseases and a guarantee of careful, conscientious work. The same author discusses the surgical diseases of the skin in a masterly manner.

Chapters follow upon injuries and diseases of the bones, by Mr. Boyd and Mr. Clutton, which leave little to be said upon those subjects, and the volume closes with an excellent article on diseases of the joints by Mr. A. E. Barker.

There is considerable invasion of each other's territory by the different writers, and the editor states in his preface that he has not attempted to avoid this, believing that the fullest expression of divergent opinions upon questions not absolutely settled will lead to a better understanding of them, and in this he is undoubtedly right. The present volume is to be highly commended, and gives promise that the *System* will amply set forth the state of surgery in the British Isles.

Disorders of the Male Sexual Organs. By Eugene Fuller, M. D., Instructor in Genito-urinary and Venereal Diseases in the New York Post-graduate Medical School, etc. Philadelphia: Lea Brothers & Co., 1895. Pp. v–17 to 241.

The title of this work is misleading, in that the work treats of only a small portion of the sexual apparatus. The organs considered are the vas deferens, the seminal vesicles, and the ejaculatory ducts. The situation of these parts, being beyond ocular and instrumental examination, has rendered them an uninviting field for the modern methods of local treatment, and consequently little attention has been paid to their diseases until recently. The author has given them much attention, however, for the past few years, and in the present work he gives to the profession the result of his studies and experience in a wide field of observation. The first eighty pages of the book are devoted to the anatomy, physiology, and pathology of the organs. The chapter on anatomy is very complete and shows careful study of the parts with which the author has dealt. Numerous and excellent cuts illustrate these studies, which emphasize the close relation of the organs with the rectum and the importance of the latter as a medium of examination and treatment. The diseases treated of are simple and gonorrhœal inflammation, tuberculosis, stone, and neoplasms—chiefly of the seminal vesicles. Calculi are said to be very rare, and neoplasms generally secondary to growths in the bladder, prostate, or rectum. The major portion of the book may therefore be said to relate to inflammatory, gonorrhœal, and tubercular diseases of the seminal vesicles. Upon these subjects the author has given much information, and has brought before the profession a treatment which will be of benefit in many cases of chronic genito-urinary disease. The beneficial effects of massage to the prostate have long been known. How much success has been due to this, and how much to milking out the vesicles, can not be told, as the latter involves the former to a great extent. Nevertheless, the author maintains that they are entirely different processes and produce distinct results. The book is well produced, mechanically, and will prove a useful supplement to general works on genito-urinary diseases.

Lectures on Appendicitis and Notes on other Subjects. By Robert T. Morris, A. M., M. D., Fellow of the New York Academy of Medicine, etc. With Illustrations by Henry Macdonald, M. D. New York: G. P. Putnam's Sons, 1895. Pp. viii–163.

This work, while it embraces several other subjects, is chiefly devoted to the detail of the author's experience in the treatment of appendicitis. His advocacy of a small incision in operating in these cases has brought him many patients, especially those with the chronic and recurring variety. His results have been excellent beyond doubt. Accuracy in judging of the proper point for the incision is of far greater importance than limitation of the cut to a certain arbitrary length. The questions which interest the profession now are not as to how many appendices we can remove and with how small an incision, but how frequently and when it is necessary to operate in these cases. The operation is well described, and the author's views of the pathology of appendicitis are fully detailed. We can not but admire the illustrations, and congratulate the author upon the many interesting specimens he has obtained.

BOOKS, ETC., RECEIVED.

Therapeutics of Infancy and Childhood. By A. Jacobi, M. D., Clinical Professor of the Diseases of Children in the College of Physicians and Surgeons (Columbia University), New York, etc. Philadelphia: J. B. Lippincott Company, 1896. Pp. 5 to 518.

Cerebral Hyperæmia, the Result of Mental Strain or Emotional Disturbance: the So-called Nervous Prostration or Neurasthenia. By William A. Hammond, M. D., late Professor of Anatomy and Physiology in the University of Maryland, Baltimore, etc. Second edition, enlarged and improved. Washington: Brentano's, 1896. Pp. 5 to 118.

A History of the Chronic Degenerative Diseases of the Central Nervous System. By Thomas Kirkpatrick Monro, M. A., M. D., Fellow of the Faculty of Physicians and Surgeons of Glasgow, etc. Glasgow: Alexander Macdougall, 1895. Pp. vi–82.

The Medical Muse: Grave and Gay. A Collection of Rhymes Up to Date, by the Doctor, for the Doctor, and against the Doctor. Collected and arranged by John F. B. Lillard. New York: I. E. Booth, 1896. Pp. 141.

The Value of Family History and Personal Condition in Estimating a Liability to Consumption. Published by the Mutual Life Insurance Company of New York, 1895. Pp. 28.

Report of the Commissioner of Education for the Year 1892 to 1893. Volume I, containing Parts I and II.

The Middlesex Hospital. Reports of the Medical, Surgical, and Pathological Registrars for the Year 1894.

Transactions of the American Surgical Association. Volume the Thirteenth. Edited by De Forest Willard, A. M., Ph. D., M. D., Recorder of the Association.

Report of the Tenth Annual Meeting of the Association of Executive Health Officers of Ontario, held in Belleville, Ontario, on August 14 and 15, 1895.

Report of the Health Department of the City and County of San Francisco, for the Fiscal Year ending June 30, 1895.

The History of Anæsthesia or Painless Surgery. By William R. Hayden, M. D. [Reprinted from the *International Journal of Surgery.*]

The Treatment of Postural Deformities of the Trunk by Means of Rapid and Thorough Physical Development. By Jacob Teschner, M. D. [Reprinted from the *Annals of Surgery.*]

Sur une infiltration spéciale des éléments parenchymateux du foie dans diverses conditions expérimentales. Par A. Gereecke. [Extrait des *Archives de pharmacodynamie.*]

Lésions anatomiques du foie du lapin au cours de l'intoxication chronique par le chloroforme et par l'alcool. Étude expérimentale de la cirrhose du foie. Par H. Mertens. [Extrait des *Archives de pharmacodynamie.*]

Miscellany.

An English Doctor on the Feeling of the United States toward England.—Dr. A. Conan Doyle has made many warm friends in America, and in his fiction, so far as we are acquainted with it, there are none of those irritating innuendoes against Americans that so disfigure the writings of many British authors and serve to engender animosity. We are glad to find that Dr. Doyle has written the following letter, which recently appeared in the London *Times:*

"An Englishman who travels in the United States comes back, according to my experience, with two impressions, which are so strong that they overshadow all others. One is the excessive kindness which is shown to individual Englishmen. The other is of the bitter feeling which appears to exist both in the press and among the public against his own country. The present ebullition is only one of those recurrent crises which have marked the whole history of the two nations. The feeling is always smouldering, and the least breath of discussion sets it in a blaze. I believe, and have long believed, that the greatest danger which can threaten our empire is the existence of this spirit of hostility in a nation which is already great and powerful, but which is destined to be far more so in the future. Our statesmen have stood too long with their faces toward the East. To discern our best hopes as well as our gravest dangers they must turn the other way.

"As to the cause of this feeling, it is not so unreasonable as Englishmen usually contend. It is the fashion among us to apportion the blame between the Irish-American and the politician who is in search of his vote. But no such superficial explanation as this can cover the fact that the Governors of thirty American States should unhesitatingly indorse a Presidential message which obviously leads straight to war. The dislike so widely spread and so fierce in its expression can not be explained by the imported animosity of the Celtic Irishman.

"Few Englishmen could be found now to contend that we were justified in those views of taxation which brought on the first American war, or in the question of searching neutral vessels which was the main cause of the second. This war of 1812 would possibly only occupy two pages out of five hundred in an English history, but it bulks very large in an American one, and has left many bitter memories behind it. Then there was the surly attitude which England adopted toward the States after they had won their independence, the repeated frictions during the Napoleonic epoch, and the attack upon an American frigate by a British fifty-gun ship in time of peace. After the war there was the Florida dispute in the time of Andrew Jackson, the question of the Oregon line, the settlement of the Maine and New Brunswick line, and, finally, the hostile attitude of most of our press at the time of the civil war. Since then we have had two burning questions, that of the Alabama claims and that of the Behring Sea fisheries, culminating in this of Venezuela. The history of his country, then, as it presents itself to an American, is simply a long succession of quarrels with ourselves, and how can it be wondered at if he has now reached that chronic state of sensitiveness and suspicion which we have not outgrown ourselves in the case of the French?

"If we are to blame as a community for some at least of these unfortunate historical incidents, we are even more to blame as individuals for the widespread bitterness which is felt against us. We have never had a warm, ungrudging word of heartfelt praise for the great things which our kinsmen have done, for their unwearying industry, their virtues in peace, their doggedness in war, their unparalleled clemency when war was over. We have always fastened upon the small, rude details and overlooked the great facts behind. In our shocked contemplation of an expectoration upon the floor we have lost sight of universal suffrage and equal education. Our travelers, from Mrs. Trollope and Dickens onward, have been surprised that the versatile hard-working men, who often combined ten trades in one to adapt themselves to the varying needs of a raw, growing community, had not the manners of Oxford or the repose of Sussex. They could not understand that this rough vitality and overbearing energy which carried them through their task implied those complementary defects which must go with unusual virtues. Of all English travelers to the States, there was hardly one who did not make mischief with his reminiscences until, in our own days, Mr. Bryce did something to rectify the balance. And our want of charity and true insight are [is?] the more inexcusable since no one has written more charmingly of England than Washington Irving, Emerson, and Holmes. Our journals and public men are in the habit now, as a rule, of alluding to America and Americans in the most friendly way, and that must in time have its effect, if recent unhappy events do not change it. We should, in my opinion, lose no opportunity of doing those little graceful acts of kindness which are the practical sign of a brotherly sentiment. Above all I should like to see an Anglo-American Society started in London, with branches all over the empire, for the purpose of promoting good feeling, smoothing over friction, laying literature before the public which will show them how strong are the arguments in favor of an Anglo-American alliance, and supplying the English press with the American side of the question and *vice versa.* Such an organization would, I am sure, be easily founded, and would do useful work toward that greatest of all ends, the consolidation of the English-speaking races."

The Bacillus Pyogenes Filiformis.—The November-December number of the *Bulletin of the Johns Hopkins Hospital* contains a communication by Dr. Simon Flexner, in which he

states that during the past winter a large, healthy rabbit gave birth to a litter of young on March 13th and was found dead on the 18th. The young of this animal were also found dead before the death of the mother occurred. The autopsy revealed that the body was well nourished; there was no evidence of death from violence; the mammary glands were still large, and upon section a lactiferous fluid escaped from their cut surfaces. There was no excess of fluid in the peritoneal cavity, the layers of the serosa appearing normal. The condition of the uterus, says the author, especially arrested attention upon the examination of the abdominal viscera. It was several times larger than the normal, although much smaller than the uterus of the rabbit at term, and presented a series of dilatations and contractions which, except for their irregular distribution, might have been mistaken for those of pregnancy. This condition was, however, he says, hardly to be considered under the circumstances, and upon inspection the dilated pouches appeared thin and semi-translucent, and gave the impression of being quite empty. The serosa over the dilatations was injected, the larger vessels were very prominent and turgid with blood, and the intervening tissue presented a rosy hue. Both cornua of the uterus were affected in the same way. Nothing abnormal was observed in connection with the ovaries. On opening the uterus after its removal with the vagina attached, the pallor of the mucous membrane contrasted with the injection of the serous coat. This pallor of the mucosa was of a peculiar opaque quality and unlike the appearance of the velvety membrane itself. On gently stroking the mucosa with a knife a thick, opaque material could be removed, which appeared to be only lightly adherent to the surface of the membrane. It was to the presence of this material, says Dr. Flexner, that the peculiar opacity was due, and the exudate extended from the vagina throughout the entire extent of the uterus. In the dilatations before mentioned the mucous membrane was of extreme tenuity, and here, as might have been expected, the layer of opaque exudate was thinner than elsewhere. The impression was given that the dilatations were brought about by accumulations of a gas. After the removal of the exudate the underlying mucosa was found to be congested. The other organs of the peritoneal cavity apparently were normal.

The pleural cavities contained fluid which was not in large amount and of a transparent hæmoglobin-red color. The serosa itself was covered with a thick, shaggy layer of a fibrin-like material. Both the parietal and visceral layers were covered with this material, which was very thick over the region of the diaphragm. The lungs were in part voluminous, in part collapsed, the expanded portions being of a firm consistence and apparently consolidated. The bronchi contained fibrinous plugs.

The pericardial sac contained a small amount of fluid between layers of a shaggy appearance, due to the presence of a fibrinous-looking exudate similar to that found covering the pleuræ. It was, however, thinner here than there.

The lymph glands of the body showed no special enlargement, and the other viscera no gross pathological changes.

Cover-slips made from the exudate in the vagina and uterus showed a surprisingly large number of organisms which were strikingly pleomorphic. Among these organisms a large number of pus cells and a few larger cells with single vesicular nuclei were scattered. Although many pus cells were present in the exudate, yet from the appearance of the cover-slips no inconsiderable portion of it must have been furnished by the bacilli.

Cover-slips made from the pericardial and pleural exudates, as well as from the consolidated portions of the lungs, showed the same organisms. While they were very numerous in the cover-slips from these situations, they were not so abundant as in the uterus.

Aerobic cultures were made upon various media, Loeffler's blood serum, sugar-agar, sugar-bouillon, plain agar and bouillon, and the agar, urine, and serum mixture; anaerobic cultures were made in plain and sugar-agar and bouillon as well as upon blood serum in Duchner's jars and an atmosphere of hydrogen. All these, kept in the thermostat for several days at 98·3° F., showed no growth whatever.

As it was feared that it would not be possible to cultivate the organism upon the usual media, says the author, the pleural cavity of a second rabbit was inoculated by breaking up a speck of the pleural exudate from the first one in bouillon and injecting the suspension with a sterilized syringe, after making a small skin incision, into this cavity. This inoculation was positive in its results.

Subsequent experiments were conducted as in the previous one by transplanting small bits of the fibrinous material from the inflamed parts of preceding animals, or of the fluid which was also present in the pleural cavities in the other animals. In this way the series was kept continuous and the bacilli were maintained alive.

Considerable variations were observed according as the inoculations were made into the pleural cavity, into the peritoneal cavity, into the subcutaneous tissues, beneath the dura mater, or directly into the circulation.

The inoculations were positive in all cases except a few in which they were made subcutaneously. The death of the animal occurred soonest when the inoculation had been made beneath the dura mater. A small portion of the skull was removed by trephining, under the usual antiseptic precautions, and a drop of the pleural fluid or a speck of the fibrinous exudate was introduced beneath this membrane, care being taken not to injure the brain. These animals, which quickly recovered from the effects of the operation, died on an average in about twelve hours after the inoculation. The usual appearances were as follows: The external layer of the dura, except at the point of puncture, appeared quite normal; the internal layer was injected. Corresponding to the point of puncture, but smaller, a grayish-white area was visible, most marked in the case of the introduction of a bit of the fibrin, and doubtless consisted in part of the exudate introduced. The pia was distinctly reddened, the vessels being more prominent than normal, and the meshes of the pia contained a thin but distinctly turbid fluid. There were no pathological changes to be observed in the cortex of the brain, and none were found in the ventricles.

Cover-slip preparations made from the point of inoculation showed, besides pus cells, a very large number of the typical bacilli. Similar preparations from the meninges at a distance from the point of inoculation also showed bacilli, but they were fewer in number, and among them more or fewer leucocytes with amphophilic granulations and polymorphous nuclei were scattered.

The pleural inoculations were followed by death in every instance, the death of the animal occurring upon the third or fourth day. The appearances presented at the autopsy were for the most part an exact reproduction of those observed in the animal which had succumbed to the natural disease. Upon the side of inoculation a thick, grayish-yellow, shaggy membrane covered the pleural surfaces, being in places four or five millimetres in thickness. The pleural cavity contained several cubic centimetres of a clear hæmoglobin-colored fluid besides, the lung for the most part being compressed. In places smaller or larger areas of lobular pneumonia were present;

and, as a rule, the inflammation was not limited to the serous membrane of the side of inoculation, but extended into the opposite pleural cavity and into the pericardial sac. However, in these situations the process was as a rule less intense, the solid exudate being less considerable, and in the case of the opposite pleural cavity sometimes entirely wanting. The superficial vessels, however, were injected and the serous surfaces of the affected membrane covered with a slimy material. In addition to this, the opposite pleural cavity always contained a pink serum similar to that found upon the side of the inoculation.

The study of the exudate upon the side of the inoculation, as well as of the fluid contained in the opposite pleural cavity and in the pericardium, showed the same organisms as had been introduced. They were most numerous upon the side of the inoculation and in the solid portion of the exudate. So far as could be determined by the use of cover-slip preparations, they were absent from the blood and distant viscera.

The inoculation of the fluid from one of these pleural cavities into the peritonæum did not always succeed in causing the death of the animal. The periods of incubation in these cases, even when the inoculations were successful, were longer than in the previous ones, the animals affected often not dying in less than a week. The results of the peritoneal inoculations were to produce either a general sero-fibrinous peritonitis or a circumscribed fibrinous peritonitis. In several instances where the inoculations were made into the pleural cavity, an extension through the diaphragm with the productions of a localized pseudo-membranous inflammation over the liver was observed. The exudate in all these cases showed large numbers of typical bacilli upon microscopical examination.

In several instances the subcutaneous inoculation of the pleural fluid was successful. Larger and smaller areas of tissue were converted into a rigid fibrinous material in which bacilli were found in large numbers.

Perhaps the most interesting, certainly the most widespread, effects, says Dr. Flexner, were obtained by the intravenous inoculation of the pleural fluid. The results were uniformly fatal, the animals all succumbing in from two to four days after inoculation. At the autopsy abscesses were present in the viscera. They were generally miliary in size, although at times they were larger and spreading. Preferences were exhibited in reference to their localization, certain organs being entirely spared. The abscesses were never absent from the brain or from the heart muscle. They appeared occasionally in the liver, more rarely still in the voluntary muscles, never in the kidneys or the lungs.

The effects of the intravenous inoculations, with respect to the points of localization of the bacilli, were in part determined by the local conditions; for example, the inoculation into non-pregnant female animals was not followed by the reappearance of the micro-organisms in any of the structures of the genital tract, whereas in the case of pregnant animals the inoculations were followed by the re-localization of the organisms and the inflammatory process in the gravid uterus.

The appearances first described in the uterus of the animal dead of the natural disease indicated that an accumulation of gas had occurred in this structure. This appearance was again observed in the experimental disease in this situation, and also in several instances in which the inoculations were made into the subcutaneous tissue and in the pleural cavity, in the last instance the gas bubbles appearing in the inflamed mediastinal tissues.

From time to time, says the author, in the course of the transfer of this organism from animal to animal, attempts were made to cultivate it. The repeated use of ordinary media in aerobic and in anaerobic cultures failed as in the first instance. The use of more concentrated media, such, for example, as a five-per-cent. peptone in solid and fluid forms, also was without success. An attempt was now made to cultivate the organism upon the organs of a healthy rabbit, which were removed with all precautions and transferred to sterile test tubes. Only occasionally did one of these tubes show contamination. Those which were uncontaminated and had shown no growth for several days were inoculated with material from the experimental animals. For the first time a growth was obtained, not, however, upon all the organs. The growth was fairly vigorous upon the lungs, the heart, and the uterus, and perhaps upon the kidney; no growth occurred upon either the spleen or the liver. Transplantations from these growths were successful only to the extent of one or two subsequent generations. The best results, he says, were obtained by cultivating the organisms upon half-grown fœtuses obtained from the rabbit, upon which medium transplantations were successful through a series of six of these objects. The inoculations of animals from the sixth generation of the bacilli obtained in this way, either into the pleural cavity or into the circulation, were followed by positive results indistinguishable from those obtained by the use of the pleural fluid before mentioned.

The Dietetic Treatment of Chronic Heart Diseases.—Glax (*Wien. med. Presse*, 1895, No. 36; *Ctlbl. f. innere Med.*, December 28, 1895) says that for fifteen years he has insisted on the importance of restricting the amount of liquor ingested by patients with heart disease. Such a restriction, he says, often alone suffices to bring about compensation, and in many cases in which such drugs as digitalis are beginning to lose their power it is restored by making the liquid ingesta correspond to the excretion.

The External Use of Creosote in the Treatment of Malarial Remittent Fevers.—In an article on this subject, published in the *British Medical Journal* for January 4th, Mr. Leonard Rogers says that the action of external applications of creosote and guaiacol in producing perspiration and lowering the bodily heat suggested to him that they might be of use in the treatment of malarial intermittent fevers. He states that he has used fifteen-minim doses of creosote, rubbed into the axilla and then covered with cotton wool, in eight cases of severe intermittent fever with temperatures varying from 103·2° to 104·4° F., the temperature being either stationary or rising at the time the drug was applied. In every case, says the author, perspiration, usually free, was produced in from half an hour to two hours, more commonly in about three quarters of an hour, and was accompanied by a marked fall of temperature, averaging 1·6° F. within three quarters of an hour, 2·3° after an hour and three quarters, and 3° within four hours after the use of the drug. Not only was the temperature reduced, but at the same time all the distressing symptoms, including the severe headache always present with high fever in these cases, were decidedly relieved, and the patients stated that they became quite comfortable when the perspiration came out. In some of these cases, says Mr. Rogers, during other paroxysms of the fever, in which the patients were not treated with creosote, but in which the ordinary diaphoretics were given, the temperature remained high for eight hours or more. In only one case was there an after-rise of more than 1° F. during the paroxysm. In five

out of seven cases in which the blood was examined during the fever, Laveran's organism was found in the red corpuscles. In one case of continued fever in which the author tried this treatment a slight fall of temperature, accompanied by some relief from the symptoms, was produced, but, he says, the good effect lasted only a few hours.

This method of treatment, says Mr. Rogers, deserves a careful trial in tropical remittent and continued fevers, and it will, he thinks, prove of great service in shortening and lessening the severity of the paroxysms of severe intermittent fevers, as its antipyretic and sudorific powers are much greater than those of the diaphoretics in common use, while it has not the drawbacks of the antipyrine class of drugs—namely, the depressing action on the heart and the tendency to reduce the number of the red blood-corpuscles, and thus to increase the state of anæmia caused by malarial fever.

Strontium Salts in the Treatment of Albuminuria.—The *Journal des praticiens* for January 4th contains an article on this subject in which the writer remarks that strontium salts induce a notable and often rapid diminution of albumin in the urine. They are, besides, indirectly useful in aiding digestion, especially in cases of Bright's disease where the patients suffer from an excess of hydrochloric acid in the stomach. Strontium lactate is a good intestinal antiseptic.

According to Constantin Paul, says the writer, strontium is useful only in the parenchymatous form of nephritis. It has no action whatever in the interstitial forms, in tuberculosis, or in renal syphilis. Gaucher and Gallois observed that strontium acted more readily on albuminuria than on the various other symptoms of Bright's disease. When the employment of the drug was suspended the amount of albumin increased until it reached its original proportion. It appears, then, says the writer, that, in cases of excessive albuminuria, where it is well to moderate the loss of albuminoids, strontium is especially indicated. Gaucher and Gallois recommend the following formula:

Strontium lactate	750 grains;
Water	11·75 ounces.

It is essential that the drug should be pure and free from barium oxide.

Somatose.—Dr. Hans Taube, of Madrid (*Wiener klinische Rundschau*, December 29, 1895), gives brief histories of a case of ulcer of the stomach and one of cancer of the stomach in which he has observed great benefit from the use of somatose. The patient with ulcer was, indeed, fully restored to health, and the subject of cancer was much benefited. Dr. Taube states also that he has used somatose with advantage in chlorosis, anæmia, phthisis, typhus, pericarditis, neurasthenia, the mercurial cachexia, and agalactia. Its effect, he says, was particularly striking in the case of mercurial cachexia.

Quinosol, a New Antiseptic.—Quinosol, or *chinosol*, as it is called in German, is described by the manufacturers as a neutral compound of oxyquinoline which, when used, gives up oxyquinoline in a nascent state and consequently of great antiseptic efficiency. Professor R. Kossmann, of Berlin (*Ctrlbl. f. Gynäkol.*, December 28, 1895), states that trials of it made at the Munich Hygienic Institute go to show that it is relatively so non-poisonous that a dose of forty-five grains, given to a rabbit, does not injure the animal, while a 1-to-40,000 solution prevents the development of cultures of the *Staphylococcus pyogenes aureus*. For several months it has entirely supplanted corrosive sublimate and carbolic acid in the author's practice, and he has seen absolutely no toxic effects due to it, or any irritation, even eczema, when it has been insufflated in powder into suppurating wounds. It does not injure the skin, even in so strong a solution as that of 1 to 500, applied repeatedly; it does give the hands a yellowish tint, but this may be removed by washing with pure water. It is free from any unpleasant odor. The author thinks it would prove a safe and efficient antiseptic in the hands of midwives. Solutions of it should be of the same strength as those of corrosive sublimate. It may be had in the form of tablets which are readily soluble.

Tooth Powders.—The *Progrès médical* for December 28th publishes the following formulas which are recommended by M. Métral in the *Bulletin général de thérapeutique:*

1. Strontium carbonate,	
Flowers of sulphur, each	225 grains;
Essence of rose	6 drops.
2. Strontium carbonate	90 grains;
Flowers of sulphur	195 grains;
Medicinal soap	55 grains;
Essence of rose	6 drops;
Mixture of gum arabic,	
Glycerin, each	q. s.

The strontium salt, says the writer, assures buccal asepsis by reason of its preservative and antiseptic action. Safranine also gives good results as an antiseptic, and for this reason it should take the place of the ordinary coloring matter in liquid dentifrices. M. Métral employs the following:

Salol	30 grains;
Tannin	30 grains;
Saccharin	4 grains;
Spirit of lavender,	
Spirit of melissa, each	225 grains;
Safranine hydrochloride	0·50 grain;
Cologne water	2·75 ounces;
Essence of peppermint	12 drops.

The *Therapeutische Wochenschrift* is cited as attributing the following formulas to Thomson:

1. Prepared chalk	2 ounces;
Pulverized camphor	150 grains;
Saccharin	15 grains.
2. Strontium carbonate	150 grains;
Calcined magnesia,	
White chalk, each	375 grains;
Salol	90 grains;
Thymol	15 grains;
Carmin,	
Essence of peppermint, each	q. s.

Ichthyol-traumaticin in the Abortive Treatment of Erysipelas.—This remedy, first lauded by Juhel Renoy, is again brought into prominent notice by the same author and Bolognesi (*Bull. gén. de thérap.*, February, 1895; *Brit. Jour. of Dermat.*, January, 1896). They maintain that in about sixty per cent. of cases its action is really abortive. Three parts of ichthyol are dissolved in ten of traumaticin; the combination is a dark-brown, thick liquid, which can be applied with a brush without producing marked disagreeable effects. The application should transcend the limits of the affected part by about three quarters of an inch, and it is always desirable in erysipelas of the face or scalp to examine the ears very carefully, and, even if they are unaffected, to surround them with a broad band of the application as a protective.

Picric Acid in the Treatment of Burns.—The *Lyon médical* for December 29th contains an abstract of an article published in the *Chronique médicale* for November 15, 1895, in which the writer states that picric acid has been successfully

employed in the treatment of burns. M. Thierry, he says, has made use of it for several years and observed immediate relief. The solution was in the proportion of from ten to fifteen in a thousand. All pain, it seems, says the writer, is immediately suppressed after the affected parts are bathed with this solution; the wound heals, no blisters form, and complete recovery is a question of a few days only. The employment of this acid presents only one inconvenience, that of leaving a yellow stain on the skin, which, however, will disappear after the application of a boric-acid solution. Picric acid has no odor, and is not caustic, irritant, or toxic in its action.

An Ointment for Burns.—The January number of the *Dublin Journal of Medical Science* publishes the following formula which is recommended by Dr. Haas in the *Allgemeine medicinische Central-Zeitung*, No. 72:

Aristol, from 75 to 150 grains;
Olive oil, 300 grains;
Vaseline,
Lanoline, each, 600 grains,

A Remedy for the Incessant Cough of Measles.—The *Gazette hebdomadaire de médecine et de chirurgie* for January 2d contains the following formula, which is attributed to Widerhofer:

Extract of hyoscyamus..... 2·25 grains;
Distilled water..... 2·2 ounces;
Syrup..... 150 grains.

A teaspoonful of this mixture is to be taken every two hours.

The Treatment of the Stump of the Umbilical Cord.—In his new book on the *Therapeutics of Infancy and Childhood*, Dr. A. Jacobi says:

"In wrapping up the end of the cord no oil must be used. Warmth and dryness favor mummification; moisture and exclusion of air, gangrene. This holds good also for the cord when it is separated from the living baby by an additional ligature, and in the dead. Thus, the former forensic axiom that a dry cord proved life, which prevailed for decades after Meckel had demonstrated its fallacy as early as 1853, is absolutely worthless. Thus, fatty substances and moisture of any kind must be avoided as much as possible. Powdered subnitrate of bismuth, or oxide of zinc, or iodoform, or salicylic acid, one part with ten parts of starch, may be dusted round the insertion of the cord and over the stump daily. The latter application is not necessarily useless (from the point of view of antisepsis), for the separation of the cord is a gradual one, and not uniform through the whole thickness of the amnion and the three blood-vessels.

"The size of the sore stump and the rapidity or slowness of cicatrization depend upon the thickness of the cord, the intensity of the line of demarcation, and the reactive inflammation. The latter are most marked in vigorous infants. As a rule, the surface is dry a few days after the falling of the cord, and cicatrization complete within twelve or fifteen days after birth. This normal process is, however, disturbed by careless handling, local irritation, and infectious influences. In these cases there is a serous or purulent secretion, and cicatrization may be deferred for many weeks. Under these circumstances local treatment is required. Carbolic acid ought to be avoided, for the newly born and the infant are easily influenced by its poisonous properties. Solutions of lead, zinc, or alum answer quite well. As before, however, I recommend the powders of zinc oxide, bismuth subnitrate, alum with starch, and salicylic acid with starch, or iodoform. Such measures will always prove helpful; to omit them in times of erysipelas or diphtheria is unpardonable. Perchloride of iron, or subsulphate of iron, must not be used. Under the hard coagulation formed by its application over the whole wound secretions will accumulate, can not escape, are absorbed, and produce sepsis. I have seen babies die from applications of iron to the umbilical stump, as I know of women dying for the same reason when the hæmorrhages from their uteri or from the lacerated vaginæ were maltreated in the same manner."

A Proposed Leidy Memorial Fellowship in Anatomy.—A committee consisting of Dr. W. Campbell Posey (chairman), Dr. Joseph Leidy, Dr. Joseph P. Tunis, Dr. Charles H. Frazier, and Dr. J. Howe Adams, and an advisory committee composed of Dr. S. Weir Mitchell, Dr. J. M. DaCosta, Dr. John Ashhurst, Jr., Dr. George A. Piersol, General Isaac J. Wistar, and Mr. C. C. Harrison, have issued a circular in which they say that it has seemed unjust to many that there is no suitable memorial to perpetuate the name of Joseph Leidy, the great scientist and teacher. A committee has therefore been organized from among his old students to raise whatever money may be necessary for the accomplishment of this object. There is no idea more suitable, no testimonial more practical, or none which would appeal more to the judgment of the great investigator himself, they say, than the establishment of a fellowship in anatomy, the great division of medicine which he loved so well. As the University of Pennsylvania was the scene of the greater part of his labors, the committee has thought it best to establish the fellowship in that institution. The creation of the fellowship will not only perpetuate the name of Leidy, but enable some practical working anatomist to carry on original work in the university, and to utilize the vast collection of material which is deposited in the Wistar Museum. It is announced that thirty thousand dollars will put such a fellowship on a permanent working basis, and it is intended that the income from this sum should be paid to the fellow, thus enabling him to pursue his studies with the assurance that his daily wants will be provided for. The committees appeal to lovers and admirers of the gentle, humane scientist whose achievements have made his name familiar on two continents, to aid by subscribing to this fund. The movement is described as a general one, and it is added that further information in regard to the purposes of the memorial and the regulations which will govern it will be communicated to those who desire it. Communications and remittances should be addressed to the secretary and treasurer, Dr. J. Howe Adams, 1523 Locust Street, Philadelphia.

The Uj Hunyadi Bitter Water.—According to Dr. L. Liebermann, this purgative water contains in 1,000 parts:

Magnesium sulphate	24·4968
Sodium sulphate	15·4320
Calcium sulphate	1·0989
Sodium chloride	1·8720
Calcium bicarbonate	0·8843
Bicarbonate of protoxide of iron	0·0189
Silicic acid	0·0100

Besides these constituents the water contains traces of lithium.

Adeps Lanæ is the trade name of a new preparation of wool fat. According to Dr. Georg J. Müller, of Berlin (*Mntsh. f. prakt. Dermatol.*, Jan. 1, 1896), it differs from lanolin in being isolated from the crude fat by a mechanical process, and not by chemical procedures. Its melting point, he says, is lower than that of the crude fat. He speaks of it as a cholesterin fat. He has employed it for a year and a half in his

ambulatory clinic, and declares that he has never observed the irritating action imputed to it by Rothmann.

For cosmetic preparations, he finds that it needs to be reduced in consistence by the addition of oil or American vaseline. He gives the following formulæ for some of these cosmetics, mostly modifications of those given by Paschkis, Unna, and others:

1. *Lana toilet milk.*

Borax	4 parts;
Neutral liquid soap	1 part;
Adeps lanæ	40 parts;
Rose water	356 "

2. *Cold cream.*

Almond oil,	
Rose water, each	3 parts;
Adeps lanæ	4 "

3. *Cucumber cream.*

Almond oil	5 parts;
Fresh expressed cucumber juice	30 "
Adeps lanæ	15 "
Vanillin, enough to perfume to the taste.	

4. *Crême céleste.*

Adeps lanæ,	
Yellow American vaseline,	
Orange-flower water, each	half an ounce.
Terpineol	ten drops.

5. *A salve for the hands.*

Boric acid	2·5 parts;
Zinc oxide	7·5 "
Adeps lanæ	25·0 "
Olive oil	15·0 "

Dr. Müller quotes Sack to the effect that adeps lanæ is capable of taking up three times its weight of water. On account of that property it is an excellent basis for cooling ointments. Dr. Müller has made extensive and very satisfactory use of the following ointments for burns, itching eczema, and other acute inflammatory affections of the skin:

1. Lead water	25 parts;
Adeps lanæ	20 "
Olive oil	5 "
2. Limewater	30 parts;
Adeps lanæ	20 "
Yellow vaseline	10 "
3. Vinegar	30 parts;
Adeps lanæ	20 "
Yellow vaseline	10 "
4. Liquid thiol	1 to 2 parts;
Distilled water	25 parts;
Adeps lanæ	20 "
Olive oil	3 "
5. Borax	2 parts;
Distilled water	50 "
Adeps lanæ	30 "
Yellow vaseline	18 "

A bandage thickly spread with one of these ointments is applied loosely, and over that an ice-bag is laid if there is considerable pain.

For a protective dressing to be applied to granulating surfaces, the following is recommended:

Borax	10 parts;
Adeps lanæ,	
Yellow vaseline, each	90 "

Dr. Müller mentions several skin diseases, such as seborrhœal eczema, chronic eczema (especially eczema tyloticum), psoriasis, and ichthyosis, in which softening applications may be required for the detachment of crusts, scales, etc., and for which salicylic acid, sulphur, or tar is commonly employed. He has found Hebra's ointment, made with adeps lanæ, the best in such cases. The way in which his apothecary makes this modified Hebra's ointment is this: Five parts of finely powdered litharge are rubbed into a smooth mass with one part of water, and this mixture is boiled with ten parts of the best olive oil over a moderate fire to form a plaster. The glycerin set free from the olive oil is removed from the plaster by agitation with hot distilled water. The plaster is then freed from water by prolonged heating over a water-bath, and a hundred parts of the yet liquid plaster are mixed with seventy parts of adeps lanæ and thirty parts of yellow American vaseline, melted together. The mixture is stirred until it cools, and is ready for use the next day.

Where comparatively large quantities of an ointment are required, as for inunctions in itching skin diseases, adeps lanæ, says Dr. Müller, should be prescribed only in private practice, on account of its cost. He has used it in a few cases of ichthyosis, prurigo, and pruritus and in many cases of scabies, in the following combinations:

1. β-naphthol	5 parts;
Olive oil	10 "
Precipitated sulphur,	
Neutral potash soap, each	30 "
Adeps lanæ	25 "
2. β-naphthol	1 to 3 parts;
Tumenol	1 to 10 "
Olive oil	30 "
Adeps lanæ	to 100 "

For the tumenol mentioned in the last formula one may substitute from one to five parts of oil of birch, from one to three parts of menthol, or from one to two parts of carbol.

Dr. Müller speaks highly of a mercurial ointment that he has had made with adeps lanæ. It keeps well, he says, is of an agreeable odor, although containing no perfume, is extraordinarily pliant, is easily wiped off, and has the same effect as the ordinary mercurial ointment. He gives the following formulæ for various pastes:

1. Salicylic acid	2 parts
Zinc oxide,	
Rice starch, each	10 "
Adeps lanæ,	
Yellow vaseline, each	35 "
2. Zinc oxide,	
Olive oil,	
Adeps lanæ, equal parts.	
3. Zinc oxide,	
Precipitated sulphur,	
Siliceous earth, each	10 parts;
Olive oil	20 "
Adeps lanæ	15 "
Distilled water	35 "

The following formula is given for a chrysarobin pencil:

Chrysarobin	4 parts;
Wax	12 "
Adeps lanæ	24 "

An ointment made according to the following formula is suitable for use in the urethra:

Silver nitrate	0·3 to 3 parts;
Distilled water	15 "
Adeps lanæ	to 30 "

The article closes with an expression of regret that trade controversies are keeping up the price of adeps lanæ.

Original Communications.

RHINOSCLEROMA.*

BY W. FREUDENTHAL, M. D.

THE condition designated under the title rhinoscleroma was described by Hebra as early as 1870. Since then a number of cases have been reported, especially in Austria and Russia. Still, in some parts of the world this disease is entirely unknown. This is particularly the case with the continent of America, with the exception of Central America, where some twenty-three cases have been reported. In the whole of the United States, according to Dr. Jackson,† there had been reported only three cases up to two years ago. There might have been a few more, but surely the cases of rhinoscleroma seen in this country are extremely rare, and this rarity may be an excuse for bringing this interesting case before you to-night.

The affection which interests us to-night is so similar to syphilis that it has been seen mostly in dermatological clinics, and described principally by dermatologists. We find the first description of it by Hebra.‡ This author had seen nine cases, in two of which the disease affected the cheek, nose, and the brow; in all the others, however, the nose and upper lip. He based the diagnosis of this peculiar affection upon the following eight factors: 1. Localization constantly in the nose. 2. Extraordinary hardness of the affected parts (like ivory). 3. Very slow development. 4. Sharp contours; absence of œdema or other inflammatory symptoms. 5. Absence of any visible metamorphosis of the neoplasm. 6. Ineffectiveness of any treatment. 7. Absence of danger to the general system. 8. Absence of pain when the diseased parts are not touched.

After this publication a number of excellent articles (by Mikulicz and others) were published from the Vienna clinics, but Hebra's ideas were, we may say, generally accepted.

Rhinoscleroma, as we consider it nowadays, is a chronic hypertrophic inflammation of the mucous and submucous tissues of the upper respiratory organs, commencing from the nose, extending down to the trachea. The disease usually begins with a thickening and induration of the skin, mostly on the sæptum cutan. narium. The nose grows broad, and its tip approximates the upper lip, so that the nose looks broad and flattened. Sometimes the breadth of the nares is very great. In one case (No. 7) of N. Wolkowitsch's # it reached two inches and three quarters. Slowly the growth fills up the whole nasal cavity and shows itself externally in the shape of a diffuse swelling or in knoblike projections. "Their surface has a normal color, or is light to dark-brownish red, traversed by a few vessels, glossy, free from hair and follicles, like a keloid or a hypertrophic cicatrix, with a smooth or finely wrinkled epidermis" (Kaposi).

Further, also, at the entrance of the nares is seen a thickening and induration, so that the opening of the nares becomes stenotic, while in the beginning it showed a dilatation.

The affection of the *pharynx* begins most probably, as mentioned by Chiari and Riehl, at the posterior surface of the soft palate. From there it goes over to the arches and the side walls of the pharynx. As a result, we see sometimes infiltrations as hard as cartilage, sometimes cicatricial tissue. Gradually the uvula shrivels, and, just as in specific cases, disappears entirely. As a result, we see the greatest variety of adhesions and cicatrizations.

In such cases the natural process is such that one would be led to believe that the ulcerations at the posterior surface of the uvula easily formed adhesions with the pharyngeal wall. Wolkowitsch, however, thinks this is not the case, but that a concentric narrowing of the communication between the upper and lower pharynx takes place. This supposition seems to me very plausible, especially when we look at my own case, of which we will speak later on.

The view expressed in the original article of Hebra and Kaposi, that rhinoscleroma is only an affection of the nose and its immediate surroundings (upper lip), had to be changed. It was proved very soon not only that pharynx and larynx became affected quite frequently, but that these organs sometimes were attacked before any affection of the nasal cavity was to be seen. Cornil and Alvarez saw two cases where the larynx was exclusively affected, which they considered as belonging to this disease. Ganghofner saw one such case. It was furthermore proved that this affection of the larynx was localized almost constantly in its lower portion, especially on the inferior parts of the vocal cords. It shows great similarity to a disease called chorditis hypertrophica chronica inferior, so that Chiari and Ganghofner consider these two affections identical, a view adopted by von Schrötter and now held by him. This view was firmly proved to be correct after Richard Paltauf had made cultures from a nodule of the soft palate. He found in this case, where only the larynx and pharynx were affected and the nose remained intact, bacilli identical to those of rhinoscleroma.

As this chorditis inferior is frequently observed in the so-called Stoerk's blennorrhœa of the larynx, Ganghofner and Chiari are inclined to trace back to a mutual cause all three affections—viz., rhinoscleroma, chorditis inferior, and Stoerk's blennorrhœa. Jakowski and Matlakowski accept these views.

Regarding this question, I quote the remarks* made by me two years ago. I stated: "That in some of these cases (*sc.* Stoerk's blennorrhœa) there is a process similar or

---

* Read before the Physicians of the German Poliklinik, March 15, 1895, and the New York Society of Dermatology and Genito-urinary Surgery, October 17, 1895.

† *Jour. of Cutaneous and Genito-urinary Diseases*, October, 1893.

‡ Ueber ein eigenthümliches Neugebilde an der Nase — Rhinosclerom, von Professor Hebra, nebst histologischem Befunde vom Dozenten Dr. Moriz Kohn. *Wien. med. Woch.*, 1870, p. 1.

Archiv für kin. Chirurgie, 1889, p. 356.

* *Annals of Ophthalmology and Otology*, p. 174, 1894.

identical with rhinoscleroma, I think I am justified in believing after a case that came under my notice at the Montefiore Home. The patient, a man twenty-seven years of age, born in Russia, came to the Montefiore Home with the outspoken symptoms of rhinoscleroma. He died suddenly a few hours after admission. The autopsy of the upper air-passages was made by the house physicians. I saw the specimens a few days later; the patient himself I had never seen. In the larynx there were extensive cicatricial adhesions of the mucosa and submucosa. The process affected especially the ventricles of Morgagni. . . . Signs of syphilis were not to be found in the cadaver." A case of rhinoscleroma that seems to me very similar to Stoerk's blennorrhœa is that of Agnes J., reported by R. Kayser (*Monatsschr. f. Ohrenheilkunde*, No. 2, 1894).

Laryngoscopically, we generally see grayish or reddish puffy tumors protruding from below the vocal cords inward. The vocal cords themselves are normal and close well. In those cases, however, where the induration goes over to the anterior and posterior walls, the glottis appears in the shape of a ring. This condition has nothing to do with syphilis.

The *trachea* is the seat of this affection, according to von Schrötter and others, quite as frequently as the larynx. We have to accept this as a fact, although Wolkowitsch, among his comparatively numerous cases, saw only one where the lumen of the trachea was narrowed down as far as the seventh ring. In this case the vocal cords and the parts of the mucous membranes directly below were changed into tumors three to four millimetres thick, and the whole mucosa was hard and thickened.

What the conditions are in our patient we shall now see. Contrary to the usual custom, I mention this patient's name, as he probably has been seen by many others, and I might get some more information about him:

Israel (Jacob) Scher, born in Strie, near Lemberg, in Galicia, is forty-five years of age, and a tailor by occupation. As a child he was always well, got married when twenty-two years old, and denies he has ever had syphilis. Seventeen years ago he had severe pains in the legs, lasting day and night, and forcing him to stay abed for fully seven years. He finally went to Vienna, where he was six months in the hospital (Allgem. Krankenhaus, department of Professor Nothnagel), leaving it perfectly cured.

About twelve or thirteen years ago a mass began to show itself on the right side of the upper part of his nose. It was of the size of a pea. While under Professor Nothnagel's treatment he was seen by some laryngologists, but does not know their names or what they said.

Five years ago this little tumor began to grow more rapidly, and in a year reached its present dimensions. At about the same time he found he could not breathe through the nose. The throat also began to close up, and tracheotomy had to be performed. The cannula was removed sixteen days later, but had to be reinserted a year later, on account of renewed difficult breathing (Dr. Gerster, Mount Sinai Hospital). Since that time he has worn the cannula.

On December 14, 1894, he was struck by a street car, and has now and then pains in the nose. Right after this accident he had a hæmorrhage from the mouth and larynx (two glassfuls of blood). Ice applications were ordered, but the throat closed itself, so that he could not breathe, and he had to be brought in great haste to a hospital, where a new tube was inserted. He thinks that the nose grew somewhat larger since the accident.

If we look at this tall, pale, emaciated, and poorly nourished man, the immense size of his nose strikes us at first sight. The right side of it shows a thickening of the size of a hen's egg. The tip is very much thickened and enlarged. The color of the nose is bluish red or dark red, and a few blood-vessels are seen traversing the keloidlike mass, whose epidermis is smooth. To the touch it feels hard, like ivory.

At the transition from the nose to the upper lip there is visible a small, light-red elevation, that, however, does not protrude much above its neighboring parts.

The large swelling that we see on the outside of the nose occupies apparently the whole mass of the right inferior turbinated body. This latter is so much enlarged that it not only occupies the whole lower meatus and prevents one from seeing anything else in the nose, but it apparently has also, by its growth, pushed the sæptum toward the left side. This deviation of the sæptum occludes the left nostril so much that breathing is rendered almost impossible. On the right side there is no breathing space at all.

The lips and mouth are perfectly normal, so that he can open and close his mouth at will. In the pharynx we see a cicatricial mass between the pillars, the soft palate, and the pharyngeal wall, that bulges upward, leaving in its uppermost centre a round opening of about an eighth of an inch in diameter. The uvula is entirely destroyed. The cicatricial tissue feels hard to the touch. The patient wears a tracheotomy tube, and the examination of his larynx was in the beginning extremely difficult. I could not see any glottis, but everything below the epiglottis seemed to me one cicatricial mass. When I first looked at the patient I thought I had a case of syphilis and syphilitic gumma of the nose. The liability to error in such cases is great, and even such men as Billroth, Mikulicz (who wrote an excellent mono-

graph on this subject), and Weinlechner believed in a relation of this disease with syphilis. The liability to error was increased in this case by the peculiar aspect of the pharynx and larynx. These cicatrizations looked, at the first glance, very much like syphilis. Nevertheless, I had to consider the

possibility of another diagnosis. Remarkable in this respect was the slow development of this process. Furthermore, syphilitic infiltrations have the characteristic tendency to break down. The tumor of the nose had existed over twelve years, and if it had been a gummy tumor it would certainly have undergone degeneration. As soon as I touched the tumor with my fingers I was struck with its remarkable hardness, and the diagnosis of rhinoscleroma was pretty sure to my mind. The hardness in some parts of this tumor was really like ivory, as Hebra stated. Other points in favor of rhinoscleroma were the absence of any inflammatory symptoms in the vicinity of the infiltration and the absence of lymph swellings, which become very marked in certain periods of syphilis.

But to remove any doubt, I gave him iodide of potassium, beginning with very small doses. On the third day afterward he came to my office in an extremely weak condition. His respirations were labored; he had pains all over the chest and in the nose, especially on pressure. The nose, parts of the pharynx, and the larynx, as far as one could see, were highly injected, and he had a slight coryza on the left side. Temperature, 100·6° F.; pulse, 96. He said he had had more fever the night before, and that he had not eaten anything for two days. I discontinued the iodide, and in a few days he was well again.

As he had told me that he had been at the Allgemeine Wiener Krankenhaus, I wrote for information to Professor Nothnagel, and I was kindly answered that this man had been treated for apex catarrh. "Neither in the history nor in the status is there any indication of the existence of a rhinoscleroma, so that I must suppose that the affection had then not been present. Nor is anything to be found in the journals about lues." To make the diagnosis positive, we had another means—*i. e.*, cultures of the bacillus.

As you know, in the stage of infiltration, and to a lesser extent in that of cicatricial contraction, there are present large spheroidal cells, first described by Mikulicz. In 1882 Frisch drew attention to the presence of micro-organisms in these cells, which micro-organisms were supposed to have the form of short bacilli. Soon it was proved—mainly through Paltauf and von Eiselsberg—that this bacillus was really the cause of rhinoscleroma, that it looked very similar to Friedländer's pneumococcus, and had somewhat similar pathogenic qualities to this, but differed from it in its behavior in cultures.

This bacillus was found in our patient. (See report of Mr. Buxton further on.) So the diagnosis of rhinoscleroma was rendered perfectly certain. There are several points, however, which were to be noticed in our patient. It is an established fact that in by far the greatest majority of cases it goes symmetrically over both sides of the body. With rare exceptions we find, wherever the process is localized, double-sided affections in equal distances from the middle line, and in almost the same state of development. In our case the affection of the nose and lip is only on one side. The left side of his nose and the upper lip are intact.

Furthermore, the affection of the nose and upper lip is, as some believe, always a direct continuation of the affection of the nasal cavities. It is not so in our case. The process in the nose forms an isolated growth of itself, while the small process on the upper lip stands isolated also.

During the few months that I have known the patient there has been very little change. For about two or three months he has complained, every time I have seen him, of pains in the nose. They are present constantly, and are rendered more severe on touching the nose. Whether this is in any way due to the traumatism caused by his railroad accident or not I can not decide. On inserting a needle at a point of the inferior turbinated that seemed to me a little soft, I did not find anything. I have done that repeatedly with the same result. But the possibility of a small abscess somewhere deep in the tissues still exists.

In the mean time, the aspect of his larynx has somewhat changed. The epiglottis shows on its right border line small grayish tuberclelike infiltrations. Below this, also on the laryngeal surface, just above the arytæno-epiglottic ligament,

is a larger grayish infiltration. Above the left arytænoid is a reddish-looking round infiltration of about the same size—*i. e.*, a quarter of an inch in diameter—which seems to be growing slowly. There is *now* a glottis to be seen, as the middle parts of the right vocal cord make slight movements. The left vocal cord and ventricular band are one mass of infiltrated, immovable tissue. When he enters the room his nose now looks pale, like the other parts of his face, but the effort of speaking makes it appear bluish red in a very short time.

Regarding the therapeutic measures to be taken in such cases we are entirely at a loss what to do. Especially so is it with our patient, who has a remarkable intolerance of medicines. So, when he once complained about lack of appetite, and I gave him diluted hydrochloric acid, ten drops three times a day, he felt so weak after taking two or three doses that I had to give it up at once. I observed similar symptoms with other drugs, so that in the last three months I have given him indifferent drugs, like aqua fœniculi, etc. Of other means that have been recommended I will mention arsenic, ointment of pyrogallic acid (1 to 9), parenchymatous injections of a two-per-cent. solution of salicylate of sodium (Lang), carbolic acid (one per cent.), sublimate, etc. All of them, however, have helped only temporarily.

Very important is the surgical removal of the tumors. Such a measure would be advisable here in the nose in order to make the air-passages free; but, first, he has not cared to have anything of this kind done, and, secondly, the results of surgical interference have so far not been very successful. The effect has always been transient. The wounds have generally shown good granulating surfaces, but soon a cicatricial shrinkage has set in, making the hope of getting free air-passages vain.

The treatment of his larynx and trachea by means of tubes (either von Schrötter's or O'Dwyer's) is here more than indicated in order to prevent further cicatrization in these parts; but he is opposed to any direct interference.

At present he can breathe quite well through his tracheotomy tube, and there is no immediate danger for his life. Still, in spite of Hebra's contrary assertions, he is getting weaker and weaker, so that I fear danger from these sources after a while.

In 1891 Dr. Leopold Lubliner * has published a very interesting case from Dr. Heryng's clinic. It concerned a man who had such strong infiltrations in the nose that hardly any water or air could pass through it. Accidentally this man was infected with typhoid fever, and after this was over the rhinoscleroma was almost entirely gone.

In what manner here the healing influence was effected we are not able to explain. Whether this was done through the influence of the so-called specific poisons on the diseased tissues, or through the influence of the blood serum, or, perhaps, through the genesis of new inflammatory products having a destructive influence on the affected tissues, can not be explained.

The fact remains, however, that Dr. Lubliner's patient was cured. Now, to submit our patient artificially to an infectious disease like typhoid fever, especially in his present debilitated condition, is out of the question.

According to Kaposi,† the small-celled constituents of the tissue of rhinoscleroma, its unlimited and slow growth, and its tendency to invade the healthy tissue, forced him to compare it with sarcoma, although it does not show such a malignant tendency as sarcoma. On the ground of this authority I asked Dr. Coley, of this city, whether it would not be advisable to treat this case like an ordinary case of sarcoma—*i. e.*, with injections of the antitoxines of erysipelas. He considered it rational.

But there is a third possibility of proceeding, and that is by injections of *rhinosclerine*. Professor Pawlowsky,* of Kiew, who deserves great credit for his investigations in this field, published about a year ago an article in which he showed that by these injections good results may be obtained. Mr. B. H. Buxton has been kind enough to prepare rhinosclerine for me. The following report is verbatim:

In taking cultures, a sterilized hypodermic needle was run into the affected part through the mucous membrane of the nose. The needle was then rubbed over the surface of a tube of blood serum. Cultures were also taken from the blood flowing from the puncture.

The following day the two tubes inoculated from the needle showed pure cultures of the rhinoscleroma bacillus, while colonies of the bacillus also grew in those taken from the blood, though they were mixed with numerous other colonies of bacilli and cocci, probably derived from the surface of the mucous membrane.

The bacillus is very similar to that of Friedländer, but in cultures on artificial media it retains its capsule, and the bacilli are inclosed in a network of zoogloœa.

Cultures on serum, agar, and potato show a slimy viscous growth which comes up on the needle like *Micrococcus viscosus*. In gelatin-stick cultures, a nail-head growth, similar to that of *Bacillus Friedländer*, but more translucent, appears, and after two or three days flattens out over the surface of the gelatin. The capsule is very apparent. In bouillon, masses of zoogloœa appear on the surface after two or three days, and cover-glass preparations show the capsule very distinctly. The bouillon becomes clouded throughout and later on the masses of zoogloœa sink. The growth beneath the surface presents a very different appearance under the microscope, the bacilli growing much longer, losing their capsule, and after ten or twelve days seeming to show commencing spore formation. Growth is very rapid in the incubator and also at room temperature.

A rabbit inoculated subcutaneously with living bouillon cultures up to ten cubic centimetres did not appear to be affected in any way, while guinea-pigs—dose, ten minims—showed marked induration at the point of inoculation for five or six days, though the general health remained good.

Cultures in bouillon were grown for ten days in the incubator and filtered through a Kitasato filter. Of the filtrate, one cubic centimetre and a half injected into a guinea-pig caused a rise of one degree temperature, and two days later two cubic centimetres and a half gave a rise of two degrees.

Further experiments have not been made, owing to lack of time.

The bacillus therefore corresponds to that described by the authorities on the subject, except that it appears to be very slightly, if at all, pathogenic for guinea-pigs. The bacillus is also said not to form a capsule in bouillon cultures,

* Ein Fall von Rhinosklerom der Nase, etc. *Berliner klinische Wochenschr.*, 1891, p. 983.

† Pathologie und Therapie des Rhinoscleroms. *Internat. klin. Rundschau*, 1891, p. 1111.

* Ueber die Behandlung des Rhinoskleroms mit "Rhinosklerine." *Deutsche med. Wochenschr.*, Nos. 13 and 14, 1894.

but in this instance the surface growth on bouillon showed it very clearly.

After all this was done and the cultures were ready for use, the patient positively refused any injections or operations. Should he be induced to change this decision, I will report results.

MELÆNA NEONATORUM.*

By W. MILTON LEWIS, M. D.,
BALTIMORE.

The cases which I shall report of melæna neonatorum, a condition with which the general practitioner meets but seldom, and of which even the specialist sees but a few isolated examples, are sufficiently well marked to entitle them to a place in the literature upon the subject. I also desire to review the literature with reference to the clearing up, if possible, of the obscurity surrounding the ætiology and pathology of this singular disease.

Case I.—Mrs. A. B., white, twenty-four years of age, was confined with her second child, a lean, lank, but otherwise apparently healthy girl, on the evening of April 19, 1894. Her first child, then three years of age, was a plump and hearty boy, and presented no evidence of any disease. The family history was good, no syphilis, insanity, tuberculosis, or hereditary hæmophilia being noted in the ancestors of either parent. The mother had had one miscarriage, which occurred a little more than a year previous to the birth of this child. At that time she was in the third month of gestation.

I was unable to discover the cause of the miscarriage, but am quite sure that syphilis may be excluded. During this last pregnancy she was again threatened with premature delivery—this time during the sixth month—the cause of the trouble being traced directly to heavy lifting. She lost a small amount of blood at this time, but, under the use of morphine and absolute rest, was tided safely over the difficulty, and continued on to the end of her term. Her labor was comparatively easy. Presentation, vertex; position, L. O. I. A. Duration of labor: First stage, eight hours; second stage, two hours; third stage, twenty-five minutes. No hæmorrhage, and perinæum intact. The funis was of moderate size and length, but was coiled tightly around the child's neck, encircling it twice, and interfering very markedly with the circulation, the pulsations being scarcely perceptible and the face cyanotic. The child was born asphyxiated and required several minutes for its resuscitation. It was, indeed, more than an hour before the respirations became and continued entirely normal. About eight or ten inches from the umbilicus a reef knot occurred in the funis. This knot was not tightly drawn, and is not likely to have interfered with the circulation. The placenta was apparently normal. The birth took place about 8 P. M., and the child was not put to the breast until the next morning. It then nursed heartily, and again several times during the day. The bowels moved naturally, there was no trouble with the urinary organs, and nothing abnormal was noted in the child's condition. In the evening and during the night the little one was much troubled with hiccough, but, as she had been nursing very heartily, this was supposed to be due to flatulence, and but little attention was paid to it. About four o'clock the next morning, however, some milk was vomited, and about an hour later copious hæmatemesis took place. It is impossible to even approximately estimate the amount of blood lost in this first hæmorrhage, but it must have been considerable, as the child's clothing was saturated. There were a number of moderately firm clots present. I saw the case about 5 A. M., or very shortly after the hæmorrhage took place, and found the child then almost pulseless, no radial, temporal, or femoral pulsations being detected, and the parotid pulsation, while felt, was very weak. No cardiac murmur was heard. The features were pinched and anxious; complexion waxy, with some icterus; hands, fingers, and ears translucent; temperature not noted, but the surface of the body was cold; respiration shallow and gasping; voice weak and husky. The child was constantly moaning; the bowels had moved since the hæmatemesis and contained blood; it had not nursed during the night, and upon being put to the breast refused to take the nipple, apparently from weakness. Some milk was withdrawn artificially and the child fed from a teaspoon. Examination of the nose, mouth, and throat for bleeding points was negative.

Treatment.—Small doses of subnitrate of bismuth were administered internally, and the child enveloped in cotton wool, with hot water to the extremities, and the room kept at a temperature of about 70° F. There were no more hæmorrhages until the following night, at which time there occurred another hæmatemesis. This second hæmorrhage was not so copious as the first, but was quickly followed by others; the alvine evacuations were tarry black, due to the presence of disorganized blood. There were two or three returns of the hæmorrhage during the twenty-four hours next succeeding, after which the vomiting of blood ceased. The treatment was persevered in during this time. The umbilical cord did not separate until the eighth day, and was without odor. By the end of the first week the hæmorrhages had entirely ceased, and the child began to markedly improve, the circulation becoming more active, the complexion less bloodless, the voice stronger, the surface of the body warmer, and it began to nurse heartily, I did not weigh the child at its birth, but would suppose its weight to have been about three kilogrammes. It was not a large child, but has grown uninterruptedly since its recovery from the melæna, and is now a fat, hearty child, bright and lively, sleeping, eating, and crying well. It is still, however, to a high degree anæmic, and suffers somewhat from flatulence. Its weight when four months old was thirteen pounds.

Case II.—Mrs. G., white, twenty-five years of age, gave birth to her third child, a seven-month and very puny baby, on March 12, 1895. It did not nurse, was extremely jaundiced, cried constantly, and did not show evidence of probable long continuance in life. Two days after birth it was seized with omphalorrhagia. Twelve hours later it passed a large amount of blood *per rectum* and died. No autopsy was had, and therefore nothing is known of internal lesions. No treatment had been instituted, as no physician was called until about the time of the child's death.

I have secured from the literature upon this subject, contained in the Library of the Surgeon-General's Office in Washington, the histories of a hundred and eighty-three cases of melæna vera neonatorum. In studying these histories one is struck with the multiplicity of causes to which this disease is attributed. Many writers have gone to great pains to minutely describe ulcers in the stomach and intestinal tract, and argue that the ulcer stands in direct

† Read before the Medical and Chirurgical Faculty of Maryland at its annual meeting, April, 1895.

relation to the melæna as cause and effect. That this may be true in melæna occurring in the adult there can be no doubt. I have myself lately observed two cases of melæna occurring in adults, in which the cause was undoubtedly an ulcer, but when we come to examine the bodies of infants dead with melæna neonatorum we find too many cases without perceptible lesions in the gastro-intestinal tract to account for their causation upon the theory of ulceration, though advocated by such eminent authorities as Landau, Billard, etc.

Among other causes which have from time to time found supporters there are mentioned too early ligature of the cord, fatty degeneration, bacterial infection through the vaginal discharge of the mother; compression of the funis by being coiled around the neck, by knots, etc.; compression of the abdomen, as in parturition, etc.

In support of the theory that melæna may be caused by compression of the abdominal walls, such as may occur during parturition, the compression causing an ulcer of the duodenum or of the stomach, I will relate the history of a case that came to my notice at the dispensary of the Woman's Medical College, August 14, 1894:

The patient, a white man, thirty-five years of age, by occupation an iron worker, was caught between an elevator and a beam about one year before and had his abdomen sharply compressed by this violence. He continued to work for five days, and was then seized with vomiting of blood. He had complained of a great deal of pain across the abdomen, which still continued even after the hæmatemesis had ceased. He lost about a teacupful of blood, which was not frothy, but very stringy. On the same day he began having bloody stools, which lasted three or four days. The vomited blood was dark red in color, that in the stools being also dark and frothy. He had several stools each day, his wife saying that they were about one an hour. Then the passage of blood ceased, but the pain has continued with more or less severity all the time since, but has been worse during the past seven weeks. He was very sick three weeks ago with "this terrible pain, high fever, and vomiting." He has not vomited any blood since last year, except a little very recently. As a general rule the pain is not severe enough to make him cry out, or to moan or groan, although this has happened at times. His appetite is variable, and the bowels are now rather costive. During the past seven or eight weeks he had repeatedly had diarrhœa, without any apparent dietetic error. He has a feeling of oppression after eating a heavy meal, but it does not make the pain any worse. He has had but two or three spells of vomiting during the last seven weeks; his last attack was four days ago, and at that time he vomited off and on for about two hours. Often has nausea, and stooping makes him giddy; has a great deal of headache and belching, but no heartburn. The pain is not especially increased by pressure or by stool; no cough, very rarely spits any. Never spat any blood, and has not had nosebleed. Sleeps poorly, sometimes being awake as late as 1 or 2 A. M. Feels weak and has some shortness of breath and palpitation of the heart. Previous history good; never had sick stomach or any special disease. Mother died of dropsy. Cause of his father's death, which occurred at the age of sixty, unknown.

Present Condition.—Patient is a fairly well-built man, somewhat emaciated, best weight having been one hundred and sixty pounds; present weight, a hundred and forty to a hundred and fifty pounds; color fair, very slight anæmia; chest expansion good; respiratory murmur clear both in front and behind; cardiac dullness not increased, and heart sounds clear at apex and base; reduplication of first sound at aortic cartilage. Abdomen is sunken in lower zone, but prominent in epigastrium. Kidneys, liver, and spleen not palpable; no tenderness over lower half of abdomen or behind, but a circumscribed area of great tenderness about 3·75 centimetres in diameter at the epigastrium. No enlargement of inguinal or supraclavicular glands. Tongue fairly clean; reflexes are increased. There is no difficulty with his articulation or choice of words. Is very nervous and easily startled.

This man was put to bed and placed on low diet in order to allow the ulcer of the stomach or duodenum, which was believed to be present, to heal. Unfortunately, he left the hospital before complete recovery, and his subsequent history is unknown.

We have in this case a typical example, apparently, of an ulcer resulting from pressure. Inferring the existence of an ulcer from the clinical history, we are justified in comparing the cause, compression of the abdomen, with the compression of the infantile abdominal walls taking place during parturition, and it seems reasonably certain that many cases of melæna neonatorum, where at the autopsy gastric or duodenal ulcers were found, were due to this compression occurring during the passage of the child through the pelvic canal.

Dr. Osler, in his *Practice of Medicine*, states that one of the causes of gastric or duodenal ulcer may be pressure, such as is exerted by shoemakers and others plying their usual vocations.

In a case reported by Tross in the *Deutsch. med. Woch.*, 1888, the child remained six minutes in the pelvis after the birth of the breech. There was great compression of the thorax and abdomen, followed by melæna and death. At the autopsy the stomach was found filled with blood, and at about the middle of its anterior wall there were three small black elevations, one flat, in which a tear three millimetres in length was seen, filled with coagulated blood. The mucous membrane was separated from the muscularis, blood being found between the two; also ecchymoses over various parts of the body.

As to the part played by heredity in the causation of melæna neonatorum, statistics do not offer much light.

In a case reported by Silbermann in the *Jahrb. f. Kinderkrank.*, 1877–'78, in which melæna occurred in the third child, it is also stated that the first child died after a forceps delivery and the second from navel hæmorrhage.

Fleischmann reports a case in the same journal, 1869–'70, in which a sister of the patient and a sister of the mother both died of melæna.

Hemenway, in the *Journal of the American Medical Association*, 1887, reports a case in which the patient's grandfather had died of melæna.

As to its being a manifestation of hereditary hæmophilia, as is maintained by some authors, I do not think that the statistics show a sufficiently large number of cases in which hæmophilia is definitely proved to be the cause to entitle it to the statements made.

Croom, in the London *Medical Times and Gazette*, 1880,

reports four cases, in one of which the mother was healthy while the father was a bleeder.

Lederer, in the *Allg. Wiener med. Zeit.*, 1877, also reports a case in which the father was a bleeder; and Weigert, in the *Allg. Wiener med. Cent. Zeit.*, 1878, reports a case in which the mother was a bleeder, and but for these three cases statistics are silent as to hæmophilia.

I find it noted in two cases besides my own that the cord was wrapped around the neck. One case reported by Landau in 1874 had spina bifida.

Several cases have been reported in which hereditary syphilis existed.

Neumann, in the *Arch. f. Kinderkrank.*, Bd. xii, advances the view that the hæmorrhagic diathesis in congenitally syphilitic children is, in many cases, if not in all, referable to sepsis and not to the syphilis occurring secondarily. He says that these hæmorrhages may result from a pyoseptic infection with embolic processes, or in consequence of an intoxication with the metabolic products of the bacteria. In his case the latter explanation may hold good, since the blood-vessels in the affected tissues were nowhere clogged by the micro-organisms.

Again, a very ingenious theory is that advanced by Loranchet in the *Gazette heb. de méd. et de chir.*, 1893, in which he attributes the melæna to the gradual chilling of the body surface after birth. Coming as it does at the very beginning of life *extra utero*, he says that "the cold acts as a general debilitant and depressant of the nervous system; the general circulation is disturbed; the peripheral circulation is slowed; the vaso-motor system is unbalanced. The substitution of the cardio-pulmonary cycle of the newborn for the splanchnic cycle of the fœtus is interfered with, and in the struggle of reflexes there is a reversion to the splanchnic cycle, with passive congestion of the gastro-intestinal mucous membrane, which gives rise to the hæmorrhage."

Dr. Osler has voiced the opinion of the majority of physicians of the present time when he says that the cause of this disease is enveloped in great obscurity.

Homen, in the *Finska Läk. Hand.*, 1890, tersely says that melæna is a collection of symptoms without unity in its causation.

It has seemed to me singular that so little investigation has been recorded in reference to the condition of the cranial contents in infants dead with melæna. I have notes of sixty-eight autopsies, and in but twenty two cases was the condition of the brain and its membrane noted. This is all the more singular when we remember that it has long been known from the investigations of Lussaum, Ebstein, Brown-Séquard, Vulpian, and others that injuries of certain of the nervous centres may cause congestion of and even hæmorrhage into certain abdominal viscera, notably the stomach and colon. In these cases the hæmorrhage has been capillary in its character.

Pomorski, in the *Arch. f. Kinderkrank.*, Bd. xiv, reports a case of melæna with autopsy. He found congestion of and hæmorrhage into the lungs, the gastric and small intestinal mucosa. At the same time a hæmorrhage was found in the brain, which had destroyed, among other parts, the floor of the fourth ventricle with its vaso-motor centre. Pomorski then tried to produce melæna experimentally by destroying different portions of the brain in newly born rabbits. He found that if the vaso-motor centre was injured either directly or indirectly (as by hæmorrhage into adjacent parts) congestion and possibly hæmorrhage from some portion of the alimentary canal would result. He hence concludes that hæmorrhage into the brain occurring during labor, especially in primiparæ, constitutes the principal factor in the causation of melæna. He thinks that the brain hæmorrhages which have frequently been found in autopsies upon children dead with melæna neonatorum are no longer to be regarded as complications, but as the cause of the other symptoms.

Dr. Sinkler reported a case at the meeting of the American Neurological Association in Washington, in 1894, to which, although that of a man aged sixty-seven years, I wish to refer in this connection:

The man was a stonecutter by trade, and had often been injured about the head and face by fragments of stone. In July, 1892, after exposure to the sun, he was attacked with convulsions, becoming unconscious. This attack lasted two days; six weeks later he was taken with epileptoid convulsions, which were always preceded by an aura. Soon he began to have maniacal attacks, following each epileptical seizure, and was confined in the Philadelphia Hospital in December, 1893. This condition continued until the latter part of February, 1894, when his temperature suddenly rose, his intellect began to fail, and he became somnolent. Three weeks later, without any premonitory symptoms, he was suddenly seized with a copious intestinal hæmorrhage from which he died in twelve hours. The autopsy showed softening and injection of the mucous membrane of the colon, but no ulceration or rupture of any blood-vessel. In the brain the remains of an old lepto-meningitis were found over the left hemisphere and atheroma of the vessels at the base. In the posterior right optic thalamus a small area of softening (a third by a quarter of an inch), but no other coarse lesion found.

I have under my observation at the present time a man with running epilepsy who, several months since, had an attack of melæna, from which he has now apparently entirely recovered. This man also had maniacal outbreaks at times, and is very violent. He is a mechanist, and while working twisted himself, felt a shudder, sharp pain in the epigastrium, and shortly afterward vomited blood. I was therefore inclined to attribute the cause in this instance to the rupture of a small blood-vessel in the stomach. In my first case of melæna neonatorum it is very probable that there was a considerable degree of passive congestion existing in the abdominal viscera, owing to the fact of the cord having been tightly coiled around the neck. There being no symptom of paralysis or of weakness of any muscle, it is not possible to say in this particular instance that there was any brain lesion.

A case was related at one of the meetings of the Obstetrical Society of London a few years ago by Mr. Hodges, in which seven hours after birth a copious hæmatemesis took place, followed later on by a bloody stool. In this case there was also serous discharge from the left ear, in-

ternal strabismus and subconjunctival hæmorrhage of the left eye, and partial facial paralysis, but no paralysis apparent of any other part of the body. Mr. Hodges thought that in view of the character of the lesions the melæna must have been of traumatic origin.

This child had entirely recovered by the end of one month. We well know that hæmorrhage may take place in the brain of the adult and recovery be complete, and it seems reasonable to suppose that the same may occur in a newborn infant.

Rembolt has reported a case in the *Deutsche med. Woch.*, July, 1881, in which death occurred after a copious discharge of blood *per anum*. At the autopsy no lesion was found in the intestinal canal, but a fracture of the base of the skull with effusion of blood into the brain.

Ritter has reported thirteen cases in the *Oesterr. Jahrb. f. Pädiatrie*, 1870–'71, in which an examination of the brain was made, and has given to the medical world the best *résumé* of the literature upon hæmorrhage in the newborn to be found in any language. He tabulates a hundred and ninety cases in all. Of these, sixty-five, or about thirty-four per cent., had melæna. In Ritter's cases there were meningeal congestion, inflammation, purulent and simple, œdema, extravasations of blood in the meninges and on the brain substance, softening of the pons and medulla, and effusion into the ventricles of bloody serum. In the one hundred and ninety cases reported, forty-five autopsies were had, with brain lesions mentioned in twenty-three. Other authors have reported various lesions in the brain, which I shall not repeat here. I will only say that in but two autopsies was the brain found normal in so far as gross lesions were concerned. In one of these cases, that of Eppinger, reported in the *Wien. med. Presse*, 1878, while no gross lesions of the brain were found, yet he found various organisms in the blood, the peritoneal and cerebrospinal fluids. Eppinger states that these organisms belong to the class known as monads, and he thinks the infection to have been through the mouth.

Into the bacteriology of this disease I shall not, however, enter. Suffice it to say that various bacilli and cocci have from time to time been noted. One case, that of Neumann, to which reference has already been made, may be mentioned. In a syphilitic, prematurely born infant, ecchymoses developed, and several days later gastro-intestinal hæmorrhage. Death, seventeen days later. At the autopsy was found hæmorrhage into the abdominal viscera, which he thinks was due to the hæmorrhagic diathesis. From the bacteriological examination he concludes that the sepsis was due to the *Bacillus pyocyaneus β*, and says that this bacillus had not until that time been found within the human tissues.

The majority of the authors who have recorded the findings of the post-mortem table state that there is some congestion of the intestinal canal with great anæmia of all other organs. In almost all cases great pains have been taken to discover the bleeding point in the intestines or stomach, and in a number of cases ulcers have been found. In one case, reported by Henoch, in the *Berlin. klin. Woch.*, 1883, an ulcer was found in the œsophagus near the cardiac end, which was covered with a grayish membrane resembling that of diphtheria. Absolutely nothing else was noted in the alimentary canal.

The clinical picture presented by a case of melæna neonatorum is an appalling one. An infant, apparently healthy at its birth, is suddenly seized with an attack of hæmatemesis, no warning whatever having been given, except perhaps some flatulence, hiccough, and general uneasiness. The blood which is vomited will be dark and probably clotted; the child pale, its respiration rapid and very shallow; its pulse scarcely perceptible. If placed at the breast, it will not nurse; it may lie perfectly quiet, or it may toss its limbs to and fro. If the napkin is examined it will probably now contain a pasty, tarry mass of clotted blood from the bowel. The vomiting may cease after the first attack, but the bloody stools will continue for several days, usually about one week. In many cases there is also jaundice; sometimes there is no vomiting of blood, only large bloody stools. The child will apparently have pain in the abdomen, and the abdominal walls may seem tumefied from the presence of blood within the intestinal canal. The hæmorrhage usually appears within the first week of life, often within the first few hours, and usually lasts about three days. In the cases which recover, its duration is seldom more than twenty-four hours.

The diagnosis of this affection is usually simple, an examination of the child's surroundings being all that is needed. To determine the actual source of the hæmorrhage is, however, not so easy. In general, it may be stated that the nearer the source of the hæmorrhage is to the anus, the less is the degree of change in the structure of the blood; and, *vice versa*, the nearer the source of the bleeding is to the stomach, the more changed will be the blood in its physical and chemical condition. Circumscribed areas of tenderness will point to the presence of ulcers at those points.

With reference to the frequency of this disease, statistics vary with different authors. Henoch, of Berlin, has seen but fourteen cases. Genrich, in a thesis published at Berlin in 1887, states that Carans saw one case in nineteen hundred and eleven births; that Buhl and Hecker saw eight cases in four thousand births. Spiegelberg found two cases in five thousand births, while Genrich himself saw one case in twenty-eight hundred births.

The prognosis of this affection is very grave, and when we think of the amount of blood lost in proportion to the body weight we wonder that there are any recoveries at all. The rate of mortality varies, being placed by different observers at from thirty-five to seventy-five per cent. One observer, Minot, of Boston, had the very large death-rate of eighty-four per cent.

Of the one hundred and eighty-five cases collected from the literature, the result was noted in a hundred and forty-four. Of these, ninety-eight terminated fatally, giving a mortality of about sixty-eight per cent. The character of the labor was normal in forty cases, abnormal in twelve, and not noted in a hundred and thirty-three. Of the cases in which the condition of the infant at birth was noted, thirty-five in number, I found

twenty-eight healthy, by which is meant plump, strong, and apparently well, and seven diseased. In thirty-two cases it was the first child; in eighteen cases the second; in nine cases the third; in five cases the fourth; in three cases the fifth, and in one case each it was the sixth, seventh, eighth, twelfth, and thirteenth child. In three cases it was stated that the mother was a multipara, but the number of children was not noted. The distribution between the sexes was sixty-five males and sixty-nine females, while in fifty-one cases the sex was not noted. In seventeen cases the mother's health was good and in fifteen cases it was poor. The father's health was good in seventeen cases, while in nine cases it was stated that he was unhealthy. The age at which the melæna began was noted in seventy-nine cases; of these, thirty-one were one day or less; thirty-four were between one and three days of age, and fourteen over three days old. The duration of the hæmorrhage was noted in fifty-seven cases; of these, twenty-two were one day or less, twenty-four from one to six days, and eleven over six days. The shortest time after birth at which melæna occurred was two hours, while the longest time was four months and a half. The shortest period of duration of the disease was three hours, and the longest five months. In sixty-eight autopsies there was ulcer of the stomach in six cases; of the duodenum, in three cases; in one case each was ulcer of the ileum, rectum, and œsophagus found. In twelve cases there was injection and hyperæmia of the stomach. The same lesions of the duodenum were present in nine cases of the jejunum and ileum, in eleven cases; of the colon, in twelve cases, and of the rectum, in two cases. In one case it was noted that there was embolic infection of the intestine. In four cases the stomach was found normal, and in five cases the intestines were noted as normal. In six cases there was anæmia of all the mucous membranes; of the lungs, in six cases; of the heart, in eight cases; of the liver, in nine cases, and eight cases each in the spleen, stomach, and intestines. There was found congestion of the heart in two cases, and one case each of congestion of the lungs, liver, and spleen. Pneumonia was found in four cases; nephritis, in one case; abscess, in one; croup, in two; pulmonary infarcts, in four; atelectasis, in two; teleangeiectasis, in two; ecchymosis of the body, in eight cases; there was emphysema in two cases. The heart was stated to be normal in two cases, the lungs in one case, and the liver in one.

In one case the umbilical vein was noted as filled with blood, in one case the foramen ovale was obliterated, and in one case the ductus choledochus was impervious. In two cases the tissues were noted as bloodless; general hæmorrhage into the abdominal viscera was recorded in one case. There was one case of fatty liver, and in one case the spleen was ruptured; in this case the abdominal cavity was filled with blood. The fœtal apertures were found open in two cases.

Micrococci were noted in one case, and in two cases it was especially noted that part of the intestinal canal was injected; a succeeding portion would be pale and bloodless, while still lower down in the intestinal canal there was again seen great injection of the tissues. In one case there was fracture at the base of the skull. Hæmorrhage into the pons Varolii, fourth ventricle, and medulla in two cases. Hæmorrhage and extravasation of blood into other parts of the brain in eight cases; congestion and hyperæmia in seven cases; meningeal inflammation in four cases; purulent meningitis in two cases; brain soft and mushy in two cases. In one case the sinuses were gorged with blood, in one case cerebral œdema, and in one case anæmia of the meninges. In one case the large ganglia at the base of the brain were enlarged and pale-yellow in color, while in two cases the condition of the brain was found normal. In three of the autopsies nothing abnormal was found, but in these cases the brain was not examined.

The treatment of this disease may be dismissed with a very few words. Rest is a very important element in therapy and should be promoted. Some have recommended the external application of ice, but that seems to be quite irrational, as the effect would be to contract the superficial vessels and send still more blood to the internal organs. It would seem more in accordance with the laws of physiology to give ice internally, which may easily be done by cracking it up finely and giving it along with the milk. I think it better that the child be fed from a teaspoon in small quantities, rather than to allow it to nurse, as the act of sucking would tend to increase the hæmorrhage. Some remedy to contract the smaller blood-vessels and capillaries would seem to be indicated. Wrapping in cotton wool, and the judicious use of hot bottles to keep up the body temperature, will be suggested by the collapsed condition which is often present.

Note.—Since this article was put into the hands of the printers I have had an opportunity of observing an additional case of melæna neonatorum, a brief history of which I desire here to relate:

Mrs. V., German, thirty-two years of age, gave birth to her first child, a strong, healthy boy, on November 14, 1895. Labor was perfectly normal, except, perhaps, a somewhat tedious second stage. The forceps was not used, and the child was not asphyxiated. Seventy-nine hours after birth some curdled milk was vomited, and nine hours later about five cubic centimetres of liquid blood. Nothing abnormal was observed in the fæces, they having by this time assumed a normal appearance, the meconium having disappeared. The child seemed nauseated, and during the examination vomited some brownish mucus. It was slightly jaundiced. The umbilical cord had separated, and the navel appeared somewhat inflamed, though not bleeding. During the afternoon of the next day the child had five or six tarry stools. There was no return of the hæmatemesis. On the following day the child was, so far as could be observed, quite well. The family history was entirely negative.

It seems probable that in this case the melæna was due to the prolonged compression exerted during the tedious second stage.

The treatment was by means of small doses of subnitrate of bismuth.

Literature.

Amyot. *London Med. Times*, 1850.
Andre. Schmidt's *Jahrbücher*, vol. lxxii, p. 142.

Betz. *Memorab.*, Heilbronn, 1879, vol. xxiv, p. 549.
Billard. *Diseases of Children*, p. 335.
Bowditch. *Am. Jour. of the Med. Sci.*, 1836.
Bozonet, E. *Des hémorrh. gastro-intest. chez les nouveaux-nés.*, Paris, 1866.
Bridge, N. *Chicago Med. Jour. and Exam.*, 1875, vol. xxxii, p. 487.
Bugnion and Rapin. *Bull. Soc. méd. Suisse*, Roma, 1880, vol. xiv, p. 127.
Croom. *Med. Times and Gaz.*, London, 1880, p. 480.
Dakin. *Lancet*, London, March 30, 1889.
De Nobelle. *Presse méd. belge*, 1892, vol. xliv, p. 409.
Dieterlen. *Bull. de la Soc. clin. de Paris* (1881), 1882, vol. v, p. 101.
Du Bois. *Arch. gén. de méd.*, October, 1849.
Emmet. *Am. Jour. of Obstet.*, 1890, vol. xxiii, p. 851.
Engert. *Chicago Med. Jour. and Exam.*, 1875, vol. xxxii, p. 801.
Eppinger. *Wiener med. Presse*, 1878, vol. xix, p. 778.
Epstein. *Oester. Jahrbüch. f. Paediatrie*, 1877, vol. vii, p. 119.
Fleischmann. *Jahrb. f. Kinderheilk.*, Leipsic, 1869–'70, vol. iii, p. 211.
Foster. *Ibid.*, 1875, vol. xxxi, p. 801.
Gaertner. *Centrbl. f. Gynäkol.*, 1895, vol. xviii, p. 691.
Gelpke. *Corresp. f. schweiz. Aerzte*, 1893, No. 3.
Genrich, E. *Inaugur. Diss.*, Berlin, 1887.
Gilman, C. R. *Am. Jour. of the Med. Sci.*, 1885, vol. xvi, p. 248.
Goebel. *Frauenarzt*, Berlin, 1888, vol. iii, p. 469.
Gould. *Ibid.*, 1854.
Graves, J. B. *Med. and Surg. Report.*, 1870, vol. xxii, p. 188.
Gray, St. G. *Pacific Med. Jour.*, 1891, vol. xxxiv, p. 340.
Green, C. M. *Boston Med. Surg. Jour.*, 1891, vol. cxxv, p. 218.
Haas. *Med. Jahrbüch.*, Nassau, 1851, p. 320.
Hayward. *Austral. Med. Gaz.*, August, 1889.
Helmbrech. *Med. Times and Gaz.*, London, 1880, p. 480. (See Croom.)
Helmbricht. *Med. Annalen*, Baden, vol. ix, p. 165.
Hemenway. *Jour. of the Amer. Med. Assoc.*, 1877, vol. ix, p. 743.
Henoch. *Berl. klin. Woch.*, vol. xx, p. 334; *Kinderkrankheiten*, Berlin, 1883, p. 59.
Henry, G. R. *Amer. Jour. of the Med. Sci.*, 1854, vol. xxvii, p. 268.
Hesse. *Allgem. med. Annalen*, 1825, p. 721.
Hibbard. *Western Journ. of Med.*, 1868.
Hirst. (See Partridge. *Med. Record*, 1890, vol. xxxviii, p. 203.)
Hodges. *Amer. Jour. of Obstet.*, 1890, vol. xxiii, p. 223.
Hofmann, J. *Med. Annalen*, Heidelberg, 1842, vol. viii, p. 241; *ibid.*, 1843, vol. ix, p. 164.
Homans. *Boston Med. and Surg. Journ.*, 1840.
Homen, H. E. *Finsk. läk. Sällsk. Hand.*, 1890, vol. xxxii, p. 743.
Hoogeweg. *Med. Zeit.*, Berlin, 1852, vol. xxi, p. 71.
Joachim. *Jahrb. f. Kinderheilk.*, 1889, vol. xxix, p. 238.
Klebs. *Aerzt. Correspondenzblatt*, 1874, p. 414.
Konkle. *Med. News*, 1894, vol. lxiv, p. 424.
Kwisch. *Gaz. méd.*, 1841, p. 635.
Lampe. *Oester. med. Woch.*, 1841, p. 1201.
Landau. *Inaug. Diss.*, Breslau, 1874.
Larsen, C. *Norsk. Mag. for Laeger.*, 1875, vol. v, p. 198.
Lederer. *Allgem. Wien. med. Zeit.*, 1877, vol. xxii, p. 394; *Wiener med. Woch.*, 1860, vol. x, p. 615.
Lewis, T. H. *New Zealand Med. Jour.*, 1890–'91, vol. iv, p. 355.
Loranchet. *Gaz. hebdom. de méd. et de chir.*, 1893, No. 37, p. 436.
Lyman. *Chicago Med. Jour. and Exam.*, 1875, vol. xxxii, p. 801.
McSherry, R. *Amer. Jour. of the Med. Sci.*, 1858, vol. xxxvi, p. 356.
Mellion. *Oester. med. Woch.*, 1845, p. 641.
Minot, F. *Ibid.*, vol. xxiv, p. 310.
Moll. *Med. Zeit.*, Berlin, 1837, vol. vi, p. 51.
Muller. *Münch. med. Woch.*, 1894, vol. xli, p. 245.
Neale. *Trans. of the London Med. Assoc.*, 1854, p. 532.
Neumann. *Arch. f. Kinderheilk.*, vol. xii, p. 54.
Newell. *Med. Age.*, Detroit, 1891, vol. ix, p. 423.
Osler, W. *Practice*, first edition, 1892, p. 386.
Otis. *Virginia Med. and Surg. Jour.*, 1853.
Otto, H. T. *Diss. Leipzig*, 1856.
Paoli. *Chicago Med. Jour. and Exam.*, 1875, vol. xxxii, p. 801.
Partridge. *Med. Record*, 1890, vol. xxxviii, p. 202.
Pomorski, J. *Arch. f. Kinderheilk.*, vol. xiv, p. 65.
Rehn, H. *Central. Zeit. f. Kinderheilk.*, 1877–'78, p. 227.
Rembold. *Deutsch. med. Woch.*, 1881, vol. viii, p. 385.
Ribemont, A. *Diss. Paris*, 1880.
Rilliet. *Gaz. méd. de Paris*, 1848, p. 1029.
Ritter, A. *Gaz. méd. de Paris*, 1848, vol. iii, p. 1029.
Ritter, G. *Prager med. Woch.*, 1877, vol. ii, p. 425.
Rittershain, v. *Oester. Jahrb. d. Paed.*, 1870–'71, vols. i and ii, pp. 15 and 127.
Sawtell. *British Med. Jour.*, 1885, p. 741.
Schallenmüller, *Ibid.*, 1853, vol. xxiii, p. 171.
Schmid, H. *Med. Correspondenzblatt d. Würzburg. Aerzte*, 1884, p. 193.
Schmidt–Monard. *Münch. med. Woch.*, 1891.
Schmitt, W. J. *Med. Jahrb. d. k. k. Oester. Staates*, Wien, 1817–'18, vol. iv, p. 86.
Schutz. *Centrbl. f. Gynäkol.*, 1894, vol. xviii, p. 207.
Silbermann. *Jahrb. f. Kinderk.*, Leipsic, 1877, vol. xi, p. 378.
Simmonds. *Jahrb. d. Hamburg. Staats Krank.*, 1890–'92 vol. xi, p. 484.
Smith, S. *New York Med. Jour.*, 1855, vol. xv, p. 73.
Starr, L. *Arch. of Pædiatrics*, 1893, vol. x, p. 332.
Stenger, A. *Berl. klin. Woch.*, 1887, vol. xxiv, p. 457.
Stevens, N. C. *Boston Med. and Surg. Jour.*, 1858, vol. viii, p. 396.
Suren. *Woch. f. d. gesammte Heilk.*, 1846, vol. xii, p. 307.
Taylor. *Virg. Med. Monthly*, 1877, vol. xiv, p. 672.
Thornton, J. B. *Ibid.*, 1894.
Tidd, C. H. *Detroit Review of Med. and Pharm.*, 1867, vol. xi, p. 789.
Townsend, C. W. *Arch. of Pædr.*, New York, 1894, vol. xi, p. 559; *Boston Med. and Surg. Jour.*, vol. cxxv, p. 218.
Tross. *Deutsch. med. Woch.*, 1888, vol. xiv, p. 432.
Uhdr, C. W. F. *Monatssch. f. Geburtsk.*, 1856, vol. viii, p. 24.
Veit. *Zeitsch. f. klin. Med.*, Berlin, 1882, vol. iv, p. 471.
Vogel, A. *Diseases of Children*, 1890, p. 73.
Vogel, M. *Centr. f. Gynaecol.*, 1882, vol. vi, p. 417.
V. Preuschen. *Centr. f. Gynäkol.*, 1894, vol. xviii, p. 201.
Wachsmuth. *Diss. Göttingen*, 1876.
Walker, H. V. *Med. Times and Gaz.*, London, 1885, vol. ii, p. 632.
Welch, W. H. *Ibid.*, p. 582.
White, J. F. *Cincinn. Med. Obst.*, 1857, vol. ii, p. 218.

Whittaker. *Pepper's System of Med.*, vol. ii, p. 832.
Wiegert. *Allg. med. Centr. Zeit.*, 1878, vol. xlvii, p. 206.
Zezschwitz, v. *Münch. med. Woch.*, 1888, vol. xxxv, p. 483.

1213 Patterson Avenue.

ON THE DANGER OF SMALL NUMBERS FOR THE PROGRESS OF MEDICINE.

By CARL WEILAND, M. D.,
PHILADELPHIA.

Whenever a physician or surgeon has treated a number of cases with a certain remedial measure he naturally is inclined to regard his results as to be expected again in the same next number of similar cases. Suppose, for example, that he had treated a hundred persons with diphtheria, of whom fifteen died while they were all under the same treatment. Here he would feel pretty sure to have again fifteen per cent. of deaths in the next hundred cases with the same remedy. But although this seems quite justified, it can be shown, as will be done in the following lines, that the result from such limited numbers ought to be regarded with great caution. To approach the subject properly, let us ask the definite question, What is the *probability* that, after having treated a number of cases with a certain mortality, the real death-rate will lie within certain limits? Or, if we prefer to ask the question with reference to our example, we might say, What is the probability that the real mortality will lie between certain limits, as, for example, between ten and twenty per cent., after it was found to be fifteen per cent. in the observed cases?

I say within certain limits, for that is all that we can reasonably expect in the complex facts of life.

To get to an exact understanding about the terms the word probability must be defined first. This word will be used here in the mathematical sense, according to which the probability of an event is expressed by a fraction the numerator of which denotes the number of cases favorable to that event, while its denominator denotes the number of all the cases possible under the circumstances. For example, if we ask what is the probability of throwing the number two with one die, we must say it is $\frac{1}{6}$, as there are six possible different throws, but only one favorable to the number two. In the same way we find the probability of throwing one *or* two with one die as equal to $\frac{2}{6}$, because there are only two throws, one or two, favorable to our question, while again the number of all possible throws is six. But the probability of throwing either one *or* two *or* three *or* four *or* five *or* six is $\frac{6}{6} = 1$, because there are now among the six possible cases six favorable to our question. In the last case we have certainty, which we see, then, is mathematically expressed by unity. We can say, therefore, the smaller the fraction referred to, the smaller is the probability of that event, and the nearer the fraction gets to *one*, the more likely is the event to happen.

After this definition we will return to our medical cases. Here, in order to be able to treat the problem mathematically, we will use a well-known simile that will allow us to more clearly understand the question. We may regard each medical observer as a man who sits before a large urn containing a definite but unknown number of equal balls, some of which are white and some black, but in which all balls are of exactly the same size, weight, etc., so that for him, when he takes out at random a certain number of balls, these latter are under the same conditions. Here the definite but unknown number of equal balls represents the definite but unknown number of patients with a certain disease—*e. g.*, diphtheria—which occur in a certain locality and which are all treated in exactly the same manner. The black balls refer to the cases with *exitus letalis* and the white ones to those that will recover. If, now, the man takes out a certain number of balls at random, let us say n balls, some of which, say d, are black and the rest white, we may ask, What is the probability that the ratio of black balls, d, to the whole number of balls, n, that is, the ratio $\frac{d}{n}$, is the real one in the urn within certain limits? Or, expressing it with reference to our profession, we might say: If, now, the physician treats a certain number of cases (not selected ones, but as they appear), let us say n cases of a disease, some of which, say d, die while the others recover, we may ask, What is the probability that the death-rate, the ratio $\frac{d}{n}$, lies within certain limits, let us say within one per cent., more or less? This interesting question was first proposed and answered in 1812 by the celebrated Laplace in his work *Théorie analytique des probabilités* (chapter vi), and my excuse for giving it here again lies partly in its importance, which has not been considered enough by the average practitioner, and partly in the circumstance that I look at it purely from the medical standpoint. But besides, I shall go a little further, and shall not only ask for the probability of a death-rate lying between certain limits, but also propose the query: How many cases must be treated in order to be reasonably sure that the death-rate is the correct one within a few per cent.; and finally, what are the limits within which we may assume our result to be valid after having treated a certain number of cases with a certain mortality?

Here we must observe that all these questions are justified and can come under mathematical treatment, strictly speaking, only when they refer to cases which are under the same conditions, as far as time, place, and treatment are concerned. It is true that these conditions are fulfilled very rarely; but it is clear that the results which we shall obtain under such ideal assumptions must be more favorable for our point at issue, so that, if even here we should find reasons to be cautious with the statistical use of limited numbers, we should have to be so much more in actual practice. In the book before mentioned, Laplace shows how the probability p, that after having observed the ratio $\frac{d}{n}$ (the number of deaths divided by the number of cases treated), the real mortality lies within the limits $\frac{d}{n} \pm \delta$, where δ is a small fraction, as $\frac{1}{100}$ or $\frac{2}{100}$; or, differently expressed, how the probability that from our

observed mortality the real death-rate lies between $\frac{d}{n} + \delta$ and $\frac{d}{n} - \delta$ can be expressed by the integral

$$p = \frac{2}{\lambda \sqrt{\pi}} \int_0^{\lambda} e^{-t^2} dt$$

where π has the known value 3·141, e denotes the basis of the natural logarithms = 2·718, and λ equals

$$\delta \sqrt{\frac{n^3}{2\,d\,(n-d)}}.$$

In the last expression, δ is the small refraction above referred to, n the number of cases treated, and d the number of deaths in these n cases. The different values of the integral p for the different values of λ from zero to infinity have all been carefully calculated. We will give here only a few values as they will be needed in this article:

λ.	p.	λ.	p.	λ.	p.
0·00	0·0000	0·8	0·7421	2·0	0·99532
0·11	0·1234	1·0	0·8427	3·0	0·99998
0·5	0·5205	1·2	0·9108	∞	1·00000

Let us now apply our formula to some practical examples. Suppose we had treated forty cases of diphtheria with eight deaths—that is, with a death-rate of twenty per cent. Here we have $n = 40$ and $d = 8$. We want to know the probability that this death-rate $\frac{8}{40}$ is correct within one per cent., so that the death-rate would lie between nineteen and twenty-one per cent. As we have here

$$\delta = \tfrac{1}{100}, \text{ we obtain } \lambda = \tfrac{1}{100}\sqrt{\frac{40^3}{2 \times 8 \times 32}} = 0{\cdot}11.$$

This value of λ, according to our table, makes the probability $p = 0{\cdot}123$, which is very small indeed and far from unity, the symbol of certainty. There is, then, only a little more chance than 1 to 100 that from the observed number of cases the real mortality may be expected to lie between nineteen and twenty-one per cent. In the same way we find that the probability that the death-rate lies between fifteen and twenty-five per cent. is 0·55, and that the probability of the mortality lying between forty per cent. and no death is 0·9981. This last number, indeed, is not far from unity or certainty, but the wide limits of which we may be certain in that case show clearly that forty cases are entirely insufficient to establish any conclusions.

It will be of interest to show this insufficiency of forty cases in another way. We may ask ourselves, What must the limits be for us to be able to say that the true mortality will surely lie between them? In order to do so we must look at our table for the probability p, which tells us that for $\lambda = 3$ we have the probability practically amounting to certainty, for p is then 0·99998—*i. e.*, practically one. If, therefore, we wish in our example the probability to be almost certainty, we must make $\lambda = 3$, which gives the equation $3\,\delta = \sqrt{\frac{40^3}{2 \times 8 \times 32}} = \delta \times 11{\cdot}18$, so that $\delta = \frac{3}{11{\cdot}18} = \frac{27}{100}$.

From this value of δ we see that with our number of forty cases we can be certain only of this, that the death-rate must lie between $\frac{20}{100} + \frac{27}{100}$ or $\frac{20}{100} - \frac{27}{100}$. This means that we may be sure that in the next forty cases with the same treatment our mortality may lie between forty per cent. and minus seven per cent., or that we may have nineteen deaths or no deaths at all; nay, if it were possible, even more deaths than patients, because on account of the small number forty the doubtful percentage δ is greater than the real percentage observed.

Let us now take as another example the data furnished by the article of Professor Osler, of Baltimore, in the *Medical News*, October 12, 1895, entitled, Five Years' Experience with the Cold Bath Treatment of Typhoid Fever. It is true that here again our ideal conditions are not quite fulfilled, as the cases could not be taken at random from the typhoid-fever cases of that locality, but had to be accepted as delivered to the hospital. On the other hand, they had all uniform treatment in the same surroundings, and therefore allow us to apply our formulæ with greater approximation to truth than if they had been treated by different physicians in different localities. Osler gives, first, a table of thirty-three patients admitted before the introduction of hydrotherapy, of whom eight died, the mortality, therefore, being twenty-four per cent. If we want to know between which limits the mortality may be surely expected to lie under these circumstances, we must again put $\lambda = 3$, which gives $\delta = \frac{31}{100}$. Thus we find that again the possible doubt in percentage is greater than the actual percentage observed, so that the limits would be fifty-five per cent. and minus seven per cent., which indicates that the number of thirty-three cases can not possibly give us reliable results. If we now take up his second number of two hundred and ninety-nine patients treated by hydrotherapy, of whom twenty died (mortality = 6·6 per cent.), we find that the limits which we have to postulate, in order to be sure that our next result will lie between them, are 6·6 per cent. $\pm$ 6 per cent., so that these limits are 12·6 per cent. on the one side and 0·6 on the other side. This means that between thirty-seven and two deaths may be expected among the next two hundred and ninety-nine persons with typhoid fever treated in the same manner.

If we thus see that even such numbers of two hundred and ninety-nine cases will not always suffice, we may now ask the question, How great must be the number of cases treated if we want to be sure of our result within one per cent.? Here we must return to our equation

$$\lambda = \delta \sqrt{\frac{n^3}{2d\,(n-d)}}.$$

This we may write

$$\lambda = \delta \sqrt{\frac{n}{2\,\frac{d}{n}\left(1 - \frac{d}{n}\right)}}$$

As d must always be smaller than n, we may put $d = an$, where a signifies a fraction. This gives

$$\lambda = \delta \sqrt{\frac{n}{2\,a\,(1-a)}} \text{ or } 2\,\frac{\lambda^2}{\delta^2}\,a\,(1-a) = n,$$

from which we conclude that for the same δ the value of n will be the larger the more $a\,(1-a)$ approaches to its high-

est value, which is $\frac{1}{4}$; *i. e.*, the nearer the mortality approaches fifty per cent. ($a = \frac{1}{2}$). And we further see that as $a\ (1 - a)$ decreases in value the nearer a recedes from $\frac{1}{2}$ to zero or one, therefore for the same δ or limit the number of cases n need be smaller the more the death-rate approaches 0 or one hundred per cent. Let us show that by an example. We know that $\lambda = 3$ gives us practically certainty, and therefore we will put in our last equation $\lambda = 3$. Making further $\delta = \frac{1}{100}$, as we want to be sure within one per cent., we obtain $180{,}000\ a\ (1 - a) = n$. If now we put $a = \frac{1}{2}$, we get $n = 45{,}000$; or, in other words, if we want to be sure that by a death-rate approaching fifty per cent. our result is correct within one per cent., we have to treat the enormous number of almost forty-five thousand cases. If the death-rate is higher, we have need of a smaller number of cases. For example, if the death-rate was seventy-five per cent., which means $a = \frac{3}{4}$, we have $\frac{180{,}000 \times 3}{16} = n = 33{,}750$. But if the mortality was only twenty-five per cent. we should have $a = \frac{1}{4}$ and should also get $n = 33{,}750$. This means that in either case, whether the death-rate was seventy-five or twenty-five per cent., we should have to observe about 33,750 cases in order to be sure that our result later on would not vary more than one per cent. from twenty-five or seventy-five per cent. In a death-rate of five per cent. or ninety-five per cent. we should find $n = 8{,}550$, which shows that in a first mortality of five per cent. or ninety-five per cent. we should have to study 8,550 cases if we wanted to be certain that the death-rate, five or ninety-five per cent., would not vary more than one per cent. from it in the next 8,550 cases. In the same sense we should have to treat 1,782 cases in a mortality of one or ninety-nine per cent. This clearly demonstrates how large the number of cases has to be if one desires to be sure of his results. Of course, if one is content with a smaller degree of accuracy—for example, if one wants a probability of 0·9953 — we have to make $\lambda = 2$ in our formulæ. We find, then, that the numbers necessary for this degree of probability are about half of those given before—*i. e.*, about 22,000 cases for fifty per cent., about 16,000 for twenty-five or seventy-five per cent., about 4,000 for five or ninety-five per cent., and about 800 for one or ninety-nine per cent mortality. These are still very large numbers, which we can reduce still more if we only care to be accurate within five per cent.—for example, if we only want to be sure that a death-rate of, say, ten per cent. shall be correct within five and fifteen per cent. We can find the number of cases easily by putting $\delta = \frac{5}{100}$, which gives about 1,400 cases for a mortality of fifty per cent., about 1,350 cases for one of twenty-five or seventy-five per cent., and only 342 cases for a death-rate of five per cent. But observe the meaning of the last example of five per cent. where only 342 cases are necessary. It means nothing more or less than that as many as 342 cases are required only to be sure that the result in the next 342 cases will lie between ten per cent. of deaths and no death at all; or, if one is satisfied, as before, with a probability of 0·9953, that it needs 170 cases only to be able to say with pretty great probability that in the next 170 cases under the same treatment we may have between seventeen cases of death and no death at all.

Such mathematical reasoning should make us very careful in pronouncing the results of our usual limited numbers with unrestricted confidence, even if the cases have been under the best conditions for a mathematical survey. But how much more careful must we be if we employ for our statistics cases that are widely different by time and place; for we must not lose sight of this fact, that underlying all these mathematical calculations there is the assumption that the cases have been treated under the most similar conditions as far as time, place, and remedial measures are concerned. Where this has not been done the large numbers can not be used with a great deal of confidence, because we know only too well how a disease—*e. g.*, diphtheria—may vary in its severity in different places and at different times. Should we find, however, that the results thus obtained at the same time by different observers under the same treatment agree fairly well, we may then be pretty sure that the average of all the results of the different observers will be the correct one, at least for that time. But as it does not lie in my intention to write an essay on medical statistics, I shall not treat the subject any further. My main object was to again call attention to the fact that a small number of cases can not be made to prove much either for or against a certain remedial measure, but that a large number treated under most similar conditions is essential in order to allow of any valid conclusions. My second object was to show mathematically how large, about, for certain limits these numbers would have to be to justify certain deductions and how they would have to be the greater the more the mortality approached fifty per cent. There can be no doubt that if these results are always kept before our minds we shall avoid many hasty conclusions which too often have retarded the real progress of medicine.

315 North Sixth Street.

THE TREATMENT OF FIBROID TUMORS OF THE UTERUS.*

By W. EASTERLY ASHTON, M. D.,
PROFESSOR OF GYNÆCOLOGY
IN THE MEDICO-CHIRURGICAL COLLEGE OF PHILADELPHIA.

I have chosen for the title of this paper The Treatment of Fibroid Tumors of the Uterus, believing that the importance of this subject fully warrants the selection I have made, besides giving me an opportunity of hearing the views of the distinguished members of this society upon the treatment of a disease so common among women.

For convenience of discussion we shall divide the treatment into the symptomatic and the surgical.

Hæmorrhage, pain, and the results of mechanical pressure are the symptoms which require our attention in the symptomatic treatment of uterine fibroids.

Hæmorrhage is most marked in the interstitial and submucous varieties, and may manifest itself either as a men-

* Read before the Medical Society of the County of Chemung, N. Y., November 19, 1895.

orrhagia or a metrorrhagia. The most useful drugs to relieve this symptom are ergot, hydrastis canadensis, cannabis indica, and antipyrine.

Ergot is either administered by the mouth or hypodermically; preferably by the former method, as the injections are not only very painful, but are liable to cause abscesses. Ergotine, in doses of two to three grains three times a day, is the best form in which to use the drug. On account of its depressing effects upon the heart, strychnine should be given at the same time in doses of one thirtieth of a grain. There is no question of the fact that this treatment, continued for a length of time, will in some instances not only lessen the hæmorrhages, but occasionally even diminish the size of the tumor, or at least check its growth.

The fluid extract of hydrastis canadensis and the tincture of cannabis indica may be employed in cases where no results are derived from the use of ergot. Although antipyrine has a decided action in controlling uterine hæmorrhage, its use can not be recommended, except for a very limited time, on account of its influence upon the heart.

Curettement of the uterine cavity may be resorted to when the hæmorrhage is continuous or severe and does not yield to internal treatment. A sharp curette should be used, and the mucous membrane thoroughly removed. This treatment is followed at once by marked improvement, and is one of the very best means at our command to meet the symptom under consideration. It is hardly necessary to call attention to the fact that disease of the uterine appendages is a positive contraindication to the employment of curettage.

Vaginal injections of water as hot as can be borne should be used twice daily for a considerable length of time. At least a gallon of water must be used at each injection, and the patient should lie upon her back, so that the vaginal vault will be thoroughly exposed to the douche. These injections are to be continued during the menstrual periods.

The vaginal tampon is a valuable aid in checking, for a time at least, a continuous hæmorrhage. Again, it is the most certain method we possess to control either an excessive hæmorrhage or a prolonged or profuse menstrual discharge. I have seen severe hæmorrhages controlled for months by its use. The tampon is made of absorbent gauze, cut in a strip six inches wide, and sufficiently long to contain enough material to thoroughly pack the vagina; a compress over the vulva and a T-bandage complete its application. It should be removed in twenty-four hours, and reapplied if necessary.

I can not too strongly urge the necessity of patients suffering from hæmorrhages or an excessive menstrual flow remaining in bed during the entire period of menstruation. The observance of this simple precaution will aid materially in the treatment of these cases.

From a careful study of the results obtained by others with electricity in the treatment of fibroids, I am convinced beyond a doubt in my own mind that the remedy has no place in the management of these tumors. It is undoubtedly true that electricity will relieve in some instances the hæmorrhage and lessen the pain. Yet, when we take into consideration the dangers of septic infection following its use, and also the possible existence of tubal disease, which is a positive contraindication to any form of intra uterine treatment, I can not see any advantage to be gained by employing this agent when the methods I have just described will give as good results without the dangers to life.

Pain occurring as a symptom of uterine fibroids may be due to pressure upon adjacent organs and nerves. Again, a submucous tumor projecting into the uterine cavity may cause painful contractions of the uterine walls, which become especially severe at the time of menstruation. So, too, a fibroid uterus in which the enlargement is general may be painful. Finally, adhesions between the tumor and adjacent organs or parts and local peritonitis are a frequent cause of the suffering endured in these cases.

The routine treatment for pain which I have found most useful is hot water vaginal injections twice a day, and the introduction into the vagina of cotton-wool tampons saturated in a ten-per-cent. solution of ichthyol in glycerin. The tampons are inserted twice or three times a week and removed on the following morning. Internally, I give the tincture of cannabis indica along with the bromide of sodium.

Where the symptoms are caused by pressure, the knee-chest position gives great relief, and under these circumstances I employ this posture along with the above described treatment. The patient should assume the knee-chest posture for ten to fifteen minutes three times a day: in the morning before getting out of bed, at noon, and on retiring at night. Another direction I give my patients is to lie as much as possible, when recumbent, upon the abdomen or side, so as to take the weight of the tumor away from the points pressed upon when in the erect or sitting position.

The use of posture in the treatment of pain due to pressure has in my hands accomplished more than any other method that I know of.

In fibroids associated with localized chronic peritonitis I employ salines in addition to the routine treatment, giving a sufficient quantity of the remedy to produce one watery movement daily for several days, and then using the salts only once a week for an indefinite length of time.

The pressure of fibroid tumors upon the bladder and rectum frequently causes most distressing and dangerous symptoms.

Compression of the neck of the bladder results in retention of urine in some cases, and in others vesical tenesmus. Hæmorrhoids and constipation also result from the rectum being pressed upon. In some cases the constipation is so obstinate that toxæmia occurs as the result of reabsorption. Pressure upon the ureters, if long continued and severe, gives rise to grave kidney disease and structural changes in the ureters and pelvis of the kidneys.

In the treatment of pressure symptoms little can be done beyond relieving, from time to time, the organs pressed upon, by having the patient assume the knee-chest position in the way already described.

In some cases the results of this treatment are excel-

lent, while in others there is but little difference, if any, in the severity of the symptoms. Of course much depends upon the size of the tumor, its position, and also its movability.

I have never seen any good results obtained from tampons and supporters in these cases.

Surgical Treatment.—Before considering the surgical treatment of the submucous, interstitial, and subperitoneal forms of fibroma, we shall indicate briefly the management of fibroids which are limited to the vaginal portion of the cervix, and also pedunculated growths attached to the uterine cavity or cervical canal.

Fibroid enlargements of the vaginal cervix are readily removed by amputation of the cervix and covering over the raw surfaces by bringing together the vaginal mucous membrane from above and below. The operation is very quickly done and effectually gets rid of the disease.

Pedunculated growths, or polyps, are removed by seizing the tumor with a strong forceps and making traction upon the pedicle, which is then cut away close to its attachments with scissors curved on the flat.

The operative procedures advised at the present time for the cure of uterine fibroids are hysterectomy, morcellation, myomectomy, and castration.

Hysterectomy.—This operation may be either abdominal or vaginal. The abdominal may be either supravaginal or total, and again the former may be performed by what are known as the extraperitoneal and the intraperitoneal methods.

Comparing abdominal with vaginal hysterectomy, I believe that the former is by far the safer operation. The operator is at all times able to see what he is doing; his work is complete, it is surgical, and complications are easily met and disposed of intelligently. In performing a vaginal hysterectomy the operator is working in the dark, and has no conception of the damage done during the successive steps in the operation.

I have seen vaginal hysterectomy performed by some of the best operators in this country and in Europe, and in nearly every instance the technique was a bungle from start to finish. Again, convalescence after these operations is prolonged; there is a foul discharge from the vagina, lasting, in some cases for weeks, and finally, urinary and fæcal fistulæ occur in some instances. Abdominal hysterectomy, on the other hand, has a rapid and clean convalescence, without the dangers of a prolonged suppurative process in healing.

The next question I shall refer to is that of the relative value of supravaginal hysterectomy and complete or total removal of the uterus. In the former operation the entire cervix is left in the pelvis, and, in other words, the hysterectomy is incomplete, as the uterus is removed at the internal os. In the latter operation the entire womb is taken away.

The selection of either one of these operations depends upon the indications in a given case. For example, total hysterectomy is indicated in sloughing fibroids, with general infection of the uterus, or when malignant disease is associated with the neoplasm. On the other hand, supravaginal hysterectomy is the preferable operation when these conditions are absent. I am well aware that some of the best operators in the country prefer the total removal of the uterus in all cases; but when we take into consideration that it is impossible to render the vagina aseptic, and that a total hysterectomy necessarily brings the fingers of the operator in contact with it, I believe that the supravaginal operation is the safest. Again, the vault of the vagina is better preserved when the cervix is left intact, and this point is of some importance in the selection of the operation, for the reason that sexual intercourse is somewhat interfered with after total hysterectomy.

The recent advances made in the technique of abdominal hysterectomy have resulted in practically doing away with the extraperitoneal treatment of the stump. The Trendelenburg position gives such freedom of sight and manipulation that the intraperitoneal method is now used by all progressive surgeons.

I need not refer to the disadvantages of the old extraperitoneal method: the long convalescence, the purulent discharges, the sloughing tissues, and the greater frequency of hernia are well known to us all.

The method has only one point in its favor—it is an operation which any beginner can do in uncomplicated cases. It requires no skill or dexterity, as it is not surgery.

The intraperitoneal method does not increase the mortality in the hands of competent operators, and the convalescence is as short and easy as in simple ovariotomy.

Morcellation was perfected and advocated by Péan, and is the method most frequently employed by French surgeons at the present time. The operation may have for its object simply the removal of a submucous or an interstitial growth, or it may be followed by the complete removal of the uterus through the vagina.

Without going into detail, the operation consists in enlarging the cervical canal and seizing the tumor with strong forceps and making traction upon it. The most dependent portion is then cut away with a knife or scissors. Again, the tumor is grasped with forceps, and thus, little by little, it is excised until it is entirely removed. The uterine cavity is then flushed and packed with gauze. In cases where the entire uterus is to be removed, the technique is that of a simple vaginal hysterectomy after first reducing the size of the womb by morcellation.

The operation of morcellation for the removal of a submucous or interstitial fibroid can not be too strongly condemned. It leaves the uterine cavity badly lacerated, and during the long convalescence which ensues the patient's life is in danger from septic infection. Again, vaginal hysterectomy following morcellation is not only an unsurgical but an equally dangerous operation. It has all the disadvantages and dangers of a simple vaginal hysterectomy without a single point in its favor. I have seen one of the most prominent French surgeons, in performing a vaginal hysterectomy by morcellation, meet with the mishap of having the uterus suddenly protruded through the vagina while he was making strong traction upon it. Fortunately for the patient, the uterus was free from adhesions, or the

traumatism which would have resulted would have been fatal. It is impossible for an operator to know until the operation is nearly complete whether or not adhesions are present, and the necessary manipulations in all vaginal sections are so rough and uncertain that serious or fatal accidents are likely to occur at any time.

Abdominal myomectomy is indicated when a subperitoneal fibroid has a distinct pedicle and it is thought desirable to save the uterus.

Castration for uterine fibroids is undoubtedly indicated in certain cases. Hæmorrhage is controlled in three quarters of the cases, and in three fifths there is a decrease in the size of the tumor.

The operation is contraindicated in large tumors, in fibro-cystic and soft fibroids, and in small tumors giving rise to serious pressure symptoms.

We have been taught in the past to look upon fibroid tumors of the uterus as innocent growths which, causing but little trouble, eventually disappeared after the menopause. While this is true in some instances, we now know from the experience gained in pelvic surgery that the history of the majority of these growths forces us to a directly opposite view.

First, let us study the effect of these tumors upon neighboring and distant organs, and, second, the degenerations which take place within the growths themselves.

The Falloppian tubes are frequently found to be inflamed, and in some instances distended and filled with pus or blood. I was present at the post-mortem examination of a patient who had died suddenly after the application of electricity to a large fibroid. Several ounces of pus were found in the pelvic cavity, which had escaped from a rupture in the walls of an immense pyosalpinx.

As the result of a large operative experience, I believe that tubal disease must be carefully taken into consideration in determining the question of treatment in cases of fibromata. If the physical examination revealed the condition of the uterine appendages the solution of the problem would be simple; unfortunately, however, if the tumor is of any size, it so completely fills up the pelvic cavity that a thorough palpation is impossible.

The distant organs most liable to become affected by fibroma are the kidneys, liver, and heart. The changes in these organs are produced by obstruction to the circulation, and also by direct pressure. Grave kidney disease is caused by pressure upon the ureter. Again, the heart may be hypertrophied or undergo degeneration, and finally the liver may become fatty. These pathological conditions are, as a rule, only observed in large tumors.

The mechanical friction produced by fibroma causes peritonitis and adhesions in many instances. This complication is not only serious on account of the distressing symptoms produced, but it often endangers life, and always increases somewhat the mortality following hysterectomy.

The hæmorrhages occurring in some cases are a serious complication, as the loss of blood is often the cause of death. So, too, the pain produced by the pressure of the tumor may so exhaust the patient that a fatal ending results.

Having briefly pointed out the lesions produced by fibroid tumors, I shall now consider the changes which these growths frequently undergo. These changes are in some instances inflammatory in character, and become serious either from an extension of the inflammation to the peritonæum or from suppuration taking place within the tumor itself. The causes of this complication are either a cutting off of the blood supply to the tumor, as the result of compression of its vessels, or septic infection following operative interference or intra-uterine exploration.

Cystic degeneration is met with from time to time, and occurs, I believe, more frequently than is generally supposed. These cystic fibroids may grow to an enormous size in a comparatively short space of time.

Fibrous tumors may also be the seat of cancerous or sarcomatous degeneration. Whether or not a fibroma can become a malignant tumor is as yet undecided. It is a clinical fact, however, that these degenerations are frequently observed associated with fibroid tumors of the uterus.

Among other changes occurring in fibroids, I will mention calcification, myxomatous degeneration, and softening. The latter change may be caused by pregnancy or it may be due to œdema. Again, a fibroid may remain quiescent for years and then suddenly begin to grow rapidly. I have observed this in a number of cases. It is always a serious symptom, and is due either to pregnancy intervening, or to cystic degeneration, or to inflammatory changes.

From what we know clinically, therefore, of the lesions produced in other organs by uterine fibroids, and the changes which take place within the growths themselves, it often becomes a serious question as to what is the best plan of treatment to employ in a given case.

Medical treatment can not be advised in every instance, and it would be equally wrong to urge an operation on every woman who presented herself with a uterine fibroid. Again, even when operative interference is demanded, there is much to consider before deciding upon the form of operation. The proper management of these cases depends upon a careful study of each patient, and, although I am strongly of the opinion that the vast majority of uterine fibroids demand some form of operative interference, yet I meet from time to time with women in whom the indications are in favor of palliative measures.

The environment of a patient must be considered, other things being equal. Thus, a wealthy woman can afford to try palliative measures before resorting to more radical means, while a poor woman must of necessity seek immediate relief from symptoms which interfere more or less with earning a living.

The characteristics of a tumor are important to consider. A small growth, which produces no pressure symptoms or serious hæmorrhage, may be treated medically, or castration may be performed. Fibro-cysts, soft fibromata, and rapidly growing tumors require a hysterectomy in all cases.

The various changes and degenerations and the lesions produced by fibroma in other organs must be carefully studied. Pregnancy is a serious complication and may necessitate immediate operation.

Although the physical condition must always be taken into consideration, yet we should not lose sight of the fact that many patients can not possibly recover strength until the cause of the lowered vitality is removed.

The age of a patient will at times determine the plan of treatment. Thus, a woman who is nearing the menopause, and who has a small tumor which has been quiescent for some time and causing no pressure symptoms or serious hæmorrhage, can well afford to try the effects of medication with the hope that the change of life will cure the disease. A younger woman, on the other hand, can not with safety allow the tumor to remain.

Finally, certain rare forms of broad-ligament tumors are so situated that their removal is extremely dangerous. It is safer, therefore, to use palliative methods in these cases rather than subject the patient to the risks of an operation.

2011 Walnut Street.

A CASE OF GALLSTONE IMPACTED IN THE COMMON DUCT.

CHOLEDOCHOTOMY, SUTURE, RECOVERY.

By ANDREW J. McCOSH, M. D.

J. M., a woman, aged forty-two years, was admitted on March 15, 1895. With the exception of malarial attacks, the patient had always enjoyed fair health until the end of August, 1894, when, without known cause, she was seized with sharp epigastric pain, chill, and vomiting. Soon after, jaundice appeared, and she was feverish. She noticed the gradual development of a lump on the right side just below her ribs, which became quite large and as "hard as wood." Her abdomen, especially in the region of the lump, was extremely tender. She had considerable fever, and during the illness, which kept her in bed for five or six weeks, she was at times delirious. The pain in the right side was almost constant, and was also felt at the same level in the back. She was constipated. The stools were clay-colored. At the end of a few weeks the jaundice began to fade and the vomiting ceased. Her pain also became less severe and she was able to move about for some weeks, when another attack similar to the first, but less severe, occurred. During the autumn and winter she had a series of these attacks, generally beginning with a slight chill, and always attended by jaundice and by an increase of the pain, and usually by fever and vomiting. During the attacks the stools were clay-colored and between the exacerbations the color was light brown. From September to March she was never entirely free from pain, her skin was never perfectly clear, and during more than half this period she was distinctly jaundiced.

On March 6, 1895, she came under the care of Dr. Forbes Hawkes, to whom I am indebted for the above-given history. He observed her for a week, and during this time her temperature ranged between 99° and 100°, pulse 90 to 110. From her history and symptoms Dr. Hawkes made the diagnosis of stone impacted in the common duct, with inflammation of the duct and a plastic peritonitis around the gall bladder and ducts.

On admission her temperature was 99·5°, pulse 96. Slight jaundice. Stools clay-colored. She complained of pain below the border of the liver. Liver dullness reached two or three inches below the free border of the ribs, where its edge could be felt.

Under the right rectus muscle, just below the ribs, a small nodular mass could be felt, which was somewhat tender on palpation. On account of the sudden onset of the symptoms, the intermittent character of the obstructive jaundice, the absence of tumor and of ascites, I concurred in the diagnosis of Dr. Hawkes—*i. e.*, calculus impacted in the common duct.

An operation was done on March 19th. A vertical incision was made outside the right rectus muscle, and when the peritonæum was opened the omentum was found adherent to the gall bladder, bile ducts, and duodenum. The gall bladder was of moderate size and in it were felt a few small calculi. The cystic duct was traced down to the common duct, which latter was imbedded in a mass of inflammatory tissue which bound the intestines and duct firmly together, and at a considerable depth in this mass could be felt a hard substance. The incision was enlarged by a tranverse one through the right rectus muscle. The adherent intestines were separated, and the hard substance was found to be a calculus impacted in the common duct near its point of entrance into the intestine. Passing my left index finger under the stone, I drew it with the duct upward and downward. While the duct was so held a vertical incision was made in its wall and a stone of the size of a hickory nut was extracted. Two smaller stones and an ounce or two of bile escaped and the bile was absorbed by the gauze pads which protected the intestines. The calculus had been impacted in the duct about three quarters of an inch from the duodenum. A probe was then passed through the duct, which was found pervious through its whole length. Its walls were much thickened, being fully an eighth of an inch in thickness. The incision in the duct, which was an inch in length, was closed by two rows of interrupted catgut sutures. A strip of gauze was placed over the line of suture and brought out through the abdominal wound, the remainder of which was then closed.

A moderate amount of shock followed. Recovery was uneventful. On the seventh day the gauze was removed. No sign of leakage appeared at any time. The temperature was not over 100° F., except on the fourth day, when it reached 100·5°. For the first week the pulse ranged about 100 and then with the temperature fell to normal. There was a movement of the bowels on the fifth day which was light brown, and afterward the stools were of normal color. On April 23d the sinus was completely closed, and on April 29th the patient was discharged cured. She has been well ever since and experiences no discomfort of any kind. The wound is firmly united, without sign of hernia.

Suture of the bile ducts after removal of an impacted stone is certainly preferable to cholecystenterostomy. There seems to be no reason why in ordinary cases the ducts should not be closed by sutures. As a rule their walls are much thickened, and possess sufficient consistence and firmness to retain one or two rows of sutures. J. W. Elliot (*Annals of Surgery*, July, 1895) has collected twenty-eight cases where the ducts have been sutured, and several others have since been reported. If the duct is to be closed it is essential that it be pervious throughout its entire length. If we can be sure that its calibre is intact it is unnecessary to add a cholecystotomy. Should its calibre be occluded, either partially or completely, cholecystotomy or cholecystenterostomy should be performed. If the obstruction is partial, or if there is a chance that it may disappear, which not infrequently happens, it is best to be content with a cholecystotomy and reserve the anastomosis of the gall

bladder with the intestine for a later operation should the obstruction still persist. After suture of the duct it is unwise, I think, to completely close the abdominal wound; a strip of gauze or a tube should be inserted and left for a few days for drainage. In a certain proportion of cases leakage will inevitably occur. Elliot found that there was leakage of bile in five cases out of the twenty-eight which he collected.

A CASE OF RETINAL HÆMORRHAGE.*

By MATTHIAS LANCKTON FOSTER, M. D.,
ASSISTANT SURGEON TO THE MANHATTAN EYE AND EAR HOSPITAL.

During the present age of bicycling the following case may be of interest, as it illustrates one of the possible dangers of an immoderate degree of violent exercise. But I should not like to be understood to magnify this danger as one particularly likely to result from this form of sport:

A young man, twenty years of age, while "scorching" on his bicycle, suddenly noticed a mist over his left eye. This haziness persisted, and on the next day he consulted his family physician, by whose advice, a few days later, he came under my observation. At that time the vision of his left eye was $\frac{20}{200}$. Ophthalmoscopic examination revealed a large hæmorrhage in the macular portion of the retina in process of absorption. A week later the effused blood had become about half absorbed and the vision seemed a little clearer. An examination of the heart and kidneys revealed no lesion of these organs, and I could detect nothing in the appearance of the remaining vessels of either retina, or from palpation of the radial and temporal arteries, to suggest a weakness in, or disease of, the vascular walls. There was no history of syphilis or any other constitutional disease which I could elicit. The refraction was slightly hypermetropic. To my regret, the patient passed from under my observation, so I do not know the final result.

It may be interesting to consider whether the severe bodily exercise employed in propelling a bicycle as rapidly as possible, familiarly known as "scorching," had anything to do with the occurrence of this retinal hæmorrhage.

Some writers have asserted that the intraocular circulation is only very slightly affected by the state of the general circulation, but there is considerable evidence that this view is erroneous. We know that a venous hyperæmia of the retina occurs as a part of a general venous congestion, particularly when this happens as a result of cardiac disease, and that an arterial hyperæmia is present in inflammations.† We also learn from Loring‡ that systolic pulsation has been noted by more than one observer in eyes which were perfectly sound, and where there was no heart disease. The explanation of the phenomenon, as given by this author, is that the lateral pressure in the arteries is less than the intraocular pressure, which may happen from some reduction in the heart's impulse, or by some obstruction to the current by which the influx of blood into the eye is reduced either in quantity or in force.

We have, then, evidence that venous congestion from general circulatory disturbance is associated with distention of the retinal veins, that reduction in cardiac force may induce systolic arterial pulsations in the retina, and that other causes may bring about dilatation of the arteries, and it does not seem unreasonable that the circulatory disturbance incident upon severe muscular exercise might induce a hyperæmia of the retina which would act as an exciting cause of hæmorrhage.

Sir Benjamin Ward Richardson, in a paper read in January, 1895, before the Medical Society of London, asserts that the pulse of all bicycle riders is full and bounding, and rarely under 100 beats in a minute, except when they are coasting. If the heart is examined during a few moments of rest, it is found to be full and bounding, the external impulse very pronounced, the sounds of the heart full and determinate, with sometimes an accentuation of the second sound. The dullness of the cardiac region is extended, indicating that the heart cavities are at their fullest distention.

This simply indicates that bicycling is a very vigorous exercise, which increases the force and action of the heart, capable of great benefit to both men and women who have no circulatory lesion, when done properly. Any other vigorous exercise also increases the force and action of the heart, and when carried to excess is well known to do harm, particularly if done irregularly and without suitable preparation of the system to meet the excessive demand. To endeavor to propel a wheel as rapidly as possible is to subject the entire system to a strain for which it is unequal, unless preparation has been made by a good course of training, and thus furnish an exciting cause for the rupture of a vessel wherever a weak point might furnish a predisposition. Such a rupture might occur in the brain and cause death, or in some of the viscera and escape all notice. In this case there was evidently a local weakness in the wall of a retinal vessel which formed the predisposing cause of the hæmorrhage. The cause of this weakness I could not elicit by my examination, but such local disease of the retinal vessels is not very uncommon, though it is usually observed in cases of myopia. If the rupture had not taken place at this time it would probably have done so later, whenever a sufficiently strong exciting cause appeared.

22 East Forty-first Street.

* Read before the Society of the Alumni of St. Luke's Hospital, November 10, 1895.

† Fuchs. *Diseases of the Eye.* Translation by Duane, p. 406.

‡ Loring. *Text-book of Ophthalmoscopy*, vol. i, p. 74.

REPORT OF A CASE OF RUPTURE OF THE UTERUS.

By CHARLES W. TOWNSEND, M. D.,
NEW BRIGHTON, N. Y.

On Monday, November 4th, I was called in consultation to see Mrs. M., who had had two children. On arriving I was met by the doctor in attendance and the midwife, and the history of the case was given me as follows: The midwife had been sent for on Saturday evening; had examined the woman and felt the presenting part, but "could not tell whether it was an arm or a leg." The fœtus was at that time alive. As the labor pains were weak she gave the patient ten grains of quinine. On Sunday she visited her again, but did not re-examine.

On Monday morning at about six o'clock the midwife was again called and found a hand presenting. She then summoned a physician, who shortly afterward arrived, examined, performed podalic version, and extracted a dead fœtus with no great difficulty. As the placenta could not be expressed he passed his hand into the vagina and was surprised to find that it came in contact with what he supposed to be a tumor. A slight amount of traction caused the appearance of a ruptured uterus at the vulvar opening.

Such was the history of the case. As the patient was moribund when I arrived nothing was attempted, and she died in about twenty minutes.

The same day, by order of the coroner, I made an autopsy on the body.

Protruding from the vulva, fundus down, was a uterus at full term. A tear running halfway up to the fundus was apparent. On opening the abdomen I removed nearly two quarts of fluid and coagulated blood from its cavity. The placenta had escaped from the uterine cavity and was lying at the brim of the true pelvis. The vagina was torn posteriorly and to the right for about two inches and a half, the tear extending up through the cervix and body of the uterus for about the same distance. Through this tear the uterus had been drawn out, tearing the right broad ligament and vessels completely and the left partially.

In the vagina was the transverse colon drawn down like a ribbon and separated from its attachments. The muscular fibres of the uterus were retracted toward the fundus, making the upper segment abnormally thick, while the cervical portion was so thinned that it could hardly be distinguished from the vagina. There were no pathological changes in either uterus or placenta, and the pelvis was roomy. The fœtus was of full term, slightly macerated, and the right arm was œdematous and ecchymosed. There was considerable hæmorrhage into the areolar tissue of the axilla. The case is the more interesting because all violence was denied, and the testimony went to show that there had been no severe labor pains.

THE DIAGNOSIS OF MOLLUSCUM CONTAGIOSUM.

By JAY F. SCHAMBERG, M. D.,
PHILADELPHIA.

A child recently presented itself at the Eye Dispensary of the Union Mission Hospital, under the care of Dr. Thomas H. Fenton, with a blepharitis, and, in addition, a small lentil seed-sized, umbilicated, whitish tumor upon the lower palpebral border. The diagnosis rested between a small cyst which had undergone colloid or perhaps lardaceous change and molluscum contagiosum. The tumor was snipped off and sent to the Stetson Laboratory of Hygiene for diagnosis. Dr. Frank Massey, the pathologist, immediately cut sections with a freezing microtome. These were rapidly stained with an aqueous solution of eosin. At the same time a small amount of whitish material was expressed from the central opening of the tumor, teased out upon a slide, and similarly stained. The latter preparation showed most beautifully the so-called "molluscum bodies." The frozen sections exhibited also a typical picture of the molluscum contagiosum. Pathologically speaking, this affection is really epitheliomatous, inasmuch as we find masses of epithelial cells deep down in the corium. The course of the disease, however, is a most benign one, always ending in recovery and never affecting the general health of the individual. In fact, the lesions disappear even without the formation of scars. The "molluscum bodies" are to-day the subject of much controversy in dermatological circles. Many are disposed to look upon them as psorosperms (coccidia), and to ascribe to them a direct ætiological influence. A large contingent, upon the other hand, while admitting the contagiousness of the affection, look upon these bodies as degenerated epithelial cells. There is weighty evidence to adduce in favor of each theory, so we are obliged to wait for future investigation of the nature of protozoa to enlighten us upon this point.

On account of their special predilection for the eyelids, these small molluscum tumors are seen almost as often in ophthalmological as in dermatological practice.

HYDROTHIONURIA,

OR THE PHENOMENON OF SULPHURETED-HYDROGEN GAS IN URINE.

By J. F. SCOTT, M. D.,
OBSTETRICIAN TO COLUMBIA HOSPITAL, ETC., WASHINGTON, D. C.

In the *New York Medical Journal* for June 17, 1893, I presented four cases of hydrothionuria, with a complete series of tests, my views of its clinical significance, and a review of the very limited literature.

I now wish to record a fifth case, which occurred in my service in Columbia Hospital last June:

M. S., a negress, aged seventeen years, a primipara, entered the hospital in labor on May 26, 1895, and developed antepartal and postpartal eclampsia. The labor was comparatively normal otherwise, and the child was born alive. The urine on admission contained ten per cent. by weight of albumin.

On the fifth day after delivery hydrogen sulphide was detected in the urine.

The evident absorption of this poisonous gas into her system caused symptoms of toxæmia to develop, such as restlessness, vomiting, delirium and delusions, an intermittent pulse, and complaints of smelling bad odors. The bladder was washed out with a weak solution of permanganate of potassium, and the symptoms soon subsided.

The condition of hydrothionuria is so rarely recognized that I wished to record this fifth case. I refer those who are specially interested in urology to my article in the *Journal* of the above-mentioned date.

1513 Rhode Island Avenue.

The Southwestern Medical Record.—This is the title of a new monthly journal published in Houston, Texas. The editorial staff consists of Dr. J. M. Blair, Dr. R. T. Morris, Dr. S. C. Red, Dr. J. W. Scott, and Dr. N. J. Phenix. The January number contains thirty-two octavo pages of reading matter.

Venous Phenomena.—Dr. Aloysius O. J. Kelly, of Philadelphia, has discovered an error in the concluding portion of his article on this subject, published in the *Journal* for January 25th. On page 111, second column, lines 34 and 35, for "pulmonary arteries," read *pulmonary veins.*

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co.
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, FEBRUARY 1, 1896.

THE NEW YORK ORTHOPÆDIC DISPENSARY AND HOSPITAL.

The gift of a completely equipped fireproof building, covering ground measuring twenty-five by a hundred feet, made by Mrs. Sloane in 1890, doubled the capacity of both the dispensary and the hospital, and it seemed for a time that all the requirements of the institution would be met by it for a long period. It soon became apparent to the trustees, however, that further room was needed, especially for two wards for adolescents suffering from hip disease, spinal disease, and flat-foot. The project of buying the adjoining building, No. 130 East Fifty-ninth Street, was discussed for two or three years, but nothing definitive was done. Everybody concerned realized that the acquisition would ultimately be necessary, not only for the natural growth of the hospital work, but also to insure in perpetuity the free access of light and air to the dispensary and hospital rooms; but the question as to how to raise the money required caused the trustees to hesitate, and the matter always ended in procrastination.

Last spring, however, the surgeon in chief, feeling convinced that the property was really needed, bought it himself and offered it to the institution at the price it had cost him. After some discussion the offer was accepted. Within a month the surgeon in chief had raised $8,000 toward the $30,000 required, when, as summer was coming on, active efforts were abandoned for the time being. A few weeks ago an anonymous benefactor—one who will not allow the use of initials, a person in no way connected with the institution—contributed $22,000 to pay off the indebtedness and made the further gift of $15,000 to aid in making the building fireproof. These contributions were supplemented by gifts of about $7,000 from the friends of the institution, to make up the amount necessary to erect a fireproof building.

We learn that the plans of the new building have been duly approved, and that work on it will be begun at once. With its newly acquired building, the institution owns a frontage on Fifty-ninth Street of about seventy feet. When the new hospital is completed it will have six wards, with a capacity of seventy-five beds. The two new wards are to be used for adolescents. In addition, the plans provide for a roof garden and all modern hospital equipments. The Morgan operating room is completed, and a recent special gift of $1,500 has enabled the surgeon in chief to buy the proper furniture and instruments. We congratulate the institution on all these signs of prosperity and increasing usefulness.

WHAT IS NATURAL LABOR?

In the *British Medical Journal* for January 4th Dr. Robert R. Rentoul finds fault with the "dangerously inadequate" training of medical students in England, for which he holds the General Medical Council responsible, and with the loose construction put upon the term "natural labor," a term which is made use of in the law restricting the practice of midwifery nurses. He cites definitions from various well-known authors—discordant enough, as he remarks—and proposes his own as follows: "Labor at the ninth calendar month in a woman free from organic and functional disease of the heart, lungs, kidneys, brain, and other internal organs, and from all fever diseases; when there is no impediment in the maternal passage, of either a soft or hard nature, to the passage of the child; where there is only one child in the womb; where the vertex of the child alone presents in either the first or second occipito-anterior position; where labor is completed within twelve hours from the commencement of labor; where a living child is born; where neither instrumental nor manual operations have been required; where the afterbirth comes away without the use of manual operation within twenty minutes after the birth of the child; where there is no laceration of any portion of the parturient structures; where the mother does not die within thirty-one days after confinement; and where there is no puerperal fever."

This definition, it will be seen, besides being unconscionably long, is defective; to mention only one point, would Dr. Rentoul deny the propriety of calling a labor natural because, although all his other requirements were fulfilled, the woman was struck by lightning on the thirtieth day after her parturition? Indeed, a correspondent of the same journal speaks of Dr. Rentoul's definition as "perhaps the most grotesque of all."

The discussion has found its way into the *Lancet*, in which journal for January 18th a correspondent quotes as follows from a legal opinion: "It is impossible to say what is the legal significance of the term 'natural labor.' If any question arose in a court of law as to its significance, the court would have to rely upon the evidence of experts—*i. e.*, medical gentlemen. In all probability the words 'natural labor' would be defined to mean a labor which originated other than artificially—*i. e.*, by the means of accident, drugs, or instruments, or other than in the ordinary course of nature. . . . How the ease or difficulty of a labor affects its perfect 'naturalness' is hard to understand, and I hope, in connection with any proposed midwifery legislation, to hear no more of such a block head of a term as 'natural labor.'"

MINOR PARAGRAPHS.

DOCTORS' QUARTERS IN OFFICE BUILDINGS.

A year or two ago there was some talk of putting up a building in the neighborhood of the Forty-second Street reservoir, to be devoted chiefly if not wholly to physicians' offices. The scheme fell through, but not, we suppose, in

consequence of any aversion to the plan. Now, as will be seen by our advertising pages, there is an opportunity offered for those who think well of it to try it in a favorable locality and with all the accessories that could be desired, in the new building owned by the Metropolitan Life Insurance Company, on Madison Square. In some of our Western cities physicians find it perfectly satisfactory to receive patients away from home, and perhaps in some respects preferable. We know of no reason why that should not come to be the case here in New York.

THE NEW IMPONDERABLE.

The new force—analogous in some respects to light, but certainly not completely identical with light as we are accustomed to regard it—with which, as the newspapers have informed the world, Professor Röntgen, of Würzburg, has succeeded in depicting objects that are inaccessible to ordinary vision, such as the bones of a living hand, may turn out to be serviceable in clinical investigations. At present, however, and until more is known concerning the "x rays," little else than speculation can be indulged in as regards their value as an aid in diagnosis.

AN OUTRAGE ON A PHYSICIAN.

Under this heading, in our issue for January 18th, we related an outrageous attack that had been made on both the person and the character of a prominent Staten Island physician. It seems now that his accusers afterward had the effrontery to prefer charges against him before the Medical Society of the County of Richmond. The matter having been referred to the society's board of censors, that body reports that, after a careful consideration of all the testimony in the case, they conclude that the accusation was utterly groundless, and the doctor is therefore exonerated.

THE RUM AND NARCOTIC INSTRUCTION LAW.

On Wednesday of this week the Medical Society of the State of New York passed a resolution declaring the inexpediency of the new State law requiring pupils in all the public schools to be taught for definite periods of time the effects of alcohol and narcotics on the system, and directing its committee on legislation to use all honorable effort to bring about its repeal or essential modification. We hope the committee will succeed.

THE BAR-ROOM TOWEL.

The towels that are seen dangling from certain bars and stand-up luncheon counters, in varying degrees of filthiness if not of pathogenic contamination, have been made the subject of a resolution of disapproval by the Health Department. The people of New York are getting to respect that department more and more, and so mild a word as disapproval, emanating from such a source, will, we are sure, be more heeded than the unthinking might suppose.

ITEMS, ETC.

The German Medical Society of the City of New York.—At the next meeting, to be held in the Academy of Medicine's building on Monday evening, February 3d, at 8.15 o'clock, Dr. C. Beck will present a case of subphrenic abscess; Dr. H. J. Boldt, a case of uretero-vaginal fistula successfully treated by operation; Dr. Louis Heitzmann, two cases of lichen planus; and Dr. O. G. T. Kiliani, two cases of fracture of the patella treated by Schede's plan. In all these cases the patients will be shown. Dr. E. Gruening will demonstrate preparations from two cases of otitic abscess of the brain; and Dr. A. Rose will demonstrate an apparatus for insufflation of the rectum with carbonic acid in the treatment of whooping-cough. The paper of the evening, by Dr. A. Rose, will be An Historical Consideration of Greek, the Proposed International Language for Physicians, to be discussed by Dr. A. Jacobi, Dr. George W. Jacoby, and others.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending January 28, 1896:

DISEASES.	Week ending Jan. 21		Week ending Jan. 28.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	5	4	12	2
Scarlet fever	179	25	193	17
Cerebro-spinal meningitis	3	3	0	0
Measles	345	20	436	20
Diphtheria	298	47	270	40
Small-pox	0	0	0	0
Tuberculosis	183	118	155	126

The Medical Society of the State of New York.—The society is in session in Albany as we go to press. We learn that in the list of officers for the ensuing year prepared by the nominating committee there are the names of Dr. James D. Spencer, of Watertown, for president, and Dr. L. Duncan Bulkley, of New York, for vice-president.

The Middleton Goldsmith Lectures.—Professor J. George Adami, of McGill University, Montreal, is the lecturer for this year. The subject is The Relationship between Inflammation and Certain Forms of Fibrous Hyperplasia. The first lecture was given in the hall of the New York Academy of Medicine on Friday evening, January 31st. The remaining lecture will be delivered at the same place on Monday evening, February 3d, at 8.30 o'clock.

The Richmond Academy of Medicine and Surgery.—The special order for the last meeting, on Tuesday evening, January 28th, was a discussion on Hysteria in Children.

The Manhattan Eye and Ear Hospital.—Dr. William Norris Hubbard has been appointed an assistant surgeon to the Throat Department.

The Brooklyn Gynæcological Society gave a dinner on Thursday evening, January 24th, in honor of Dr. John Byrne, the society's first president.

The Canada Medical Record, it is announced, is now owned and edited by the faculty of medicine of the University of Bishop's College.

Bellevue Hospital.—Dr. Charles E. Nammack has been appointed an assistant visiting physician on the fourth division.

Society Meetings for the Coming Week:

Monday, *February 3d:* New York Pathological Society (second Middleton Goldsmith lecture); New York Academy of Sciences (Section in Biology); Morrisania Medical Society, New York (private); Medico-legal Society, New York; Brooklyn Anatomical and Surgical Society (private); German Medical Society of the City of New York; Corning, N. Y., Academy of Medicine; Cleveland Medical Library Association; Utica, N. Y., Medical Library Association; Boston Society for Medical Observation; St. Albans, Vt.,

Medical Association; Providence, R. I., Medical Association; Hartford, Conn., Medical Society; South Pittsburgh, Pa., Medical Society; Chicago Medical Society.

Tuesday, *February 4th:* New York Obstetrical Society (private); New York Neurological Society; Buffalo, N. Y., Medical and Surgical Association; Elmira, N. Y., Academy of Medicine; Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Society of the County of Cattaraugus, N. Y. (quarterly); Hampden, Mass., District Medical Society (Springfield); Hudson, N. J., County Medical Society (Jersey City); Androscoggin, Me., County Medical Association (Lewiston); Baltimore Academy of Medicine; Medical Society of the University of Maryland (Baltimore).

Wednesday, *February 5th:* New York Academy of Medicine (Section in Public Health); Society of Alumni of Bellevue Hospital, New York; Harlem Medical Association of the City of New York; Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond (Stapleton); Penobscot, Me., Medical Society (Bangor); Bridgeport, Conn., Medical Association.

Thursday, *February 6th:* New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua, N. Y.; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington); Cuyahoga, Ohio, County Medical Society.

Friday, *February 7th:* Practitioners' Society of New York (private); Baltimore Clinical Society.

Saturday, *February 8th:* Obstetrical Society of Boston (private).

OBITUARY NOTES.

Kenneth N. Fenwick, M. D., of Kingston, Canada.—By the death of Dr. Fenwick, which occurred recently, Canada loses one of her successful sons and the medical profession one of its most brilliant members. Dr. Fenwick was professor of obstetrics and gynæcology in Queen's University, Kingston, and was famous for his skill as an operator in the field of gynæcological as well as general surgery. Alert, enthusiastic, able, and thoroughly equipped, he was a brilliant pattern for the ambitious student. To his energy was largely, if not wholly, due the modernizing of the Kingston General Hospital, which was lately capped by the opening of the Fenwick operating theatre, a thoroughly appointed building. Dr. Fenwick was but forty-five years of age, and at the acme of his remarkably successful career. Septicæmia was the cause of death. Dr. Fenwick was largely known in New York, Chicago, Philadelphia, and Baltimore.

Edward Wigglesworth, M. D., of Boston.—The death of Dr. Wigglesworth will recall to many of our middle-aged readers his activity in the early days of systematic dermatological work in the United States. He was enthusiastic in whatever he undertook and genial and attractive in social life.

Births, Marriages, and Deaths.

Married.

Allison—Creighton.—In Omaha, on Thursday, January 30th, Dr. Charles Clement Allison and Miss Katherine Creighton.

Died.

Bidwell.—In Denver, on Tuesday, January 21st, Dr. Walter Bidwell, aged thirty-five years.

Curtis.—In New York, on Friday, January 24th, Martha McCook, wife of Dr. John G. Curtis.

Greene.—In Aberdeen, Miss., on Monday, January 20th, Dr. James A. Greene, Jr.

Kirsten.—In Jersey City, on Thursday, January 23d, Dr. Adolph Kirsten, aged seventy-two years.

Potts.—In Atkins, Ark., on Sunday, January 19th, Dr. J. H. Potts, in the forty-fifth year of his age.

Wigglesworth.—In Boston, on Thursday, January 23d, Dr. Edward Wigglesworth, aged fifty-five years.

Letters to the Editor.

THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

50 West Forty-sixth Street, New York, *January 22, 1896.*

To the Editor of the New York Medical Journal:

Sir: For twelve years I have been connected with the Post-graduate school, and I believe that I know quite well the purposes of the institution and the character of those who have made it a success. There has been one single and dominant object kept in view throughout all this time, and that was to make the school and the hospital useful to the profession, a credit to its managers and teachers, and a help to the sick of the city. I do not believe that any medical institution anywhere has had more anxious and unselfish work expended upon it by its promoters. Measured by the results achieved in practical instruction to physicians and in practical help to the sick poor, there are few institutions which have done so much. Our own reports will show this. But now that we have become successful, I find that we are attacked as not being a charitable institution. This accusation comes with curious force to those who have every week for twelve years given many hours and some of the hardest work of their professional lives to the treatment of the poor at this place.

The charge is neither fair nor true: first, because we treat twenty thousand poor patients yearly for nothing in the out-patient department; secondly, because we treat many patients yearly in the hospital wards free. Most of these have their expenses paid by the hospital; but there is hardly a professor among us (and we are many) who has not personally paid for the care of some out of his own pocket. Thirdly, those patients who do pay something are, as a rule, treated for nothing. They pay for their board only. Surely it is charity which enables a sick man to receive medical care free. Fourthly, the amount paid by patients does not support the hospital, or pay for their expenses. The deficit has to be made up by the receipts from the school and from charitable donations. We are not a money-making institution in any department; and if a plain statement of the work we do were submitted to fair-minded men, I can not conceive how they could reach any conclusion but that we are doing a work that is in every essential a charitable one.

But, Mr. Editor, above all these things is the plain indubitable fact that the Post-graduate school is doing and has done a work of unexampled value in education as well as charity.

Over and over again I have heard the grateful testimony of our students as to the help they have received, by which they in turn have been able to help others and through which they have received a new pleasure and hope in their work and, indeed, a new impetus to their lives. No one can quite appreciate this as we can who have been in touch for years with the practitioner ambitious to do his best, but isolated by his work and starving for opportunities to learn and to keep abreast of the advances in his profession.

No honest and no unbiased observer of the work done by the Post-graduate schools of this city can fail to acknowledge their extraordinary value in diffusing and decentralizing the more technical knowledge of our art. It is a work which has been as nearly unselfish as human work often succeeds in being.

It is a work which does credit to our city and benefits it by attracting a thousand students here yearly, and by giving increased prominence to New York as an educational centre.

I hope you will not use the columns of your influential *Journal* to discredit this work. We are, indeed, successful, but are perhaps not beyond being injured by anonymous malice. CHARLES L. DANA, M. D.

THE ACADEMY OF MEDICINE AND THE MINOR CITY HOSPITALS.

16 WEST THIRTY-SECOND STREET, NEW YORK, *January 21, 1896.*

To the Editor of the New York Medical Journal:

SIR: I beg leave to protest against the deductions drawn in the article in the *New York Medical Journal* of Saturday, January 4th, which is headed The Academy of Medicine and the Minor City Hospitals.

You criticise the resolutions on the ground that they are "very injudiciously framed." With regard to that point I shall enter into no argument whatever, but I criticise the article in question on the ground that the statements therein contained are not based upon facts. You write: "The only real cause for complaint on which the profession is practically unanimous in indignation against the commissioners, that of the summary ejection of hospital physicians and surgeons without any stated cause, . . . is the only just cause for complaint that the medical profession has in connection with this matter." To have passed a resolution upon that ground would have been childish and absurd, inasmuch as the commissioners have the undoubted right to abolish the boards if they see fit; a right which none of the protestants have questioned. The only point in their action objected to was the indecent way in which the thing was done. In the resolution which you quote, you will note that the first one says: "The New York Academy of Medicine deprecates the action of the Commissioners of Charities and Correction in abolishing," etc. You will be good enough to note the use of the word "deprecates." The New York Academy is not asked to protest against it. It would have been foolish to protest against a right which the commissioners undoubtedly have; but in the next resolution, you will observe that "The New York Academy of Medicine *protests* against the action of the Commissioners of Charities and Correction in placing the nominations and practically the appointments of the consulting and visiting staffs of these hospitals in the hands of the incorporated medical schools and the fourth division of Bellevue Hospital (to all intents and purposes a monopoly) as contrary to the best interests of these institutions and the medical profession." In that one the word "protests" appears, and a protest is made against the action of the Commissioners of Charities and Correction for having done a thing against which reasonable objection could be made, and by doing which the question is open whether they have not violated the law. They practically delegated their functions to irresponsible parties.

In all this I fail to see one word of condemnation against the colleges, and I certainly fail to see that, had the resolutions been passed, "They would have put the New York Academy of Medicine in the attitude of having administered a scolding to the members of the faculties of the three great medical schools of the city and an insult to the gentlemen composing the fourth division of the staff of Bellevue Hospital." Where such an idea originated I do not pretend to say, but it certainly is not conveyed in the resolutions. Whether the men constituting the college faculties and the hospital staff in question are in any way deserving of the reprehension suggested in the editorial article, is another question, but there is nothing whatever in the resolutions that reflects, directly or indirectly, upon the colleges. If suspicion looked toward them, it was because there was a belief in the profession that the colleges were mixed up with the commissioners' action, and, although it was denied in behalf of one college at that evening's meeting, the haste with which they accepted the offer when made by the commissioners would lead to the belief that, if not active agents in it, they were certainly very willing and consenting parties.

The statements of the two academy resolutions are amply borne out, as can be seen upon reference to the resolutions passed by the Board of Commissioners of Charities and Correction between October 14th and 19th, and published in the *City Record* of November 13, 1895, where, among other resolutions, it is "Resolved, That the College of Physicians and Surgeons, the University Medical College, the Bellevue Hospital Medical College, and the fourth division of Bellevue Hospital, be requested each to make the following nominations, which, when confirmed, shall take effect on November 1, 1895." Then follow the seven hospitals in which the nominations are to be made; so that the resolutions were perfectly proper, perfectly in accordance with facts, and in no wise bearing upon this question of abuse or criticism or reprehension of the colleges.

It is clear that the representatives of the colleges who, you assert, took no part in the discussion before the academy, "partly because of the evident wish of the meeting to bring the question to a vote, and partly out of an unwillingness to answer charges which had been made without proof of their correctness," showed wisdom, for no charges were made in the resolutions which would call upon them to make any such rebuttal, and the resolutions were what were to be spoken to and nothing else.

Differences of opinion I care nothing about. Every man is entitled to his own views of the subject, but I emphatically protest against misrepresentations and charges which are not founded on facts, and, in proof, I instance the last sentence of your article where you say that, "In our opinion the Academy of Medicine did right in not indorsing such an unwarranted accusation against the colleges as was embodied in the resolutions." There was no accusation, warranted or unwarranted, made against the colleges in the resolutions, and I challenge you to point it out. F. R. STURGIS, M. D.

THE *INDEX MEDICUS.*

WASHINGTON, D. C., *January 23, 1896.*

To the Editor of the New York Medical Journal:

SIR: We ask permission to announce to the subscribers to the *Index Medicus* that the January number, which comprises the literature of December and the beginning of January, is

printed and will be distributed in a few days. The "back number," covering the period from May 1 to December 1, 1895, is ready for the printer, but from its extent will require some time before it can be issued.

It is proper to add that it has been found impossible to adhere to the limited number of subscribers first proposed, as subscriptions from distant points in response to applications from friends abroad still occasionally arrive. One, for example, was received to-day from Ceylon through a London friend.

J. S. Billings, M. D.,
Robert Fletcher, M. D.,
Editors of the *Index Medicus*.

Proceedings of Societies.

ASSOCIATION OF AMERICAN ANATOMISTS.

Annual Meeting, held in Philadelphia, on Thursday and Friday, December 26 and 27, 1895.

The President, Dr. Thomas Dwight, of Boston, in the Chair.

The Duty of the Medical Profession to Civilization and to Science.—In his opening address, thus entitled, the President spoke of the horror which the general public had for human dissection, and the aversion of the popular mind to this very necessary part of medical research. This prejudice, he believed, was founded, first, in the popular belief that sepulchres were violated, and, second, that the remains were subjected to wanton insult. It was idle to hope that while human nature remained as it was this aversion to dissection would ever disappear. The wisest course was to recognize it and to soften it by removing all just cause of complaint. It should be made clear to the public that dissection could and should be followed by decent burial. He himself would go so far as to have the bodies of Protestants and Catholics buried in their respective cemeteries when the creed of the deceased was known. It should also be understood that no wanton insult was permitted in reputable schools. The policy which would lead to the most satisfactory results was one of complete openness. Above all we should avoid a timidity which shirked discussion of this topic. When we had shown so clearly as to carry conviction that we had nothing to conceal a great step would have been taken. A radical defect in the laws of many States, otherwise well drawn, was that the delivery of unclaimed bodies to medical schools was optional with superintendents, boards of trustees, and municipal authorities. The result of this was that those in authority very naturally hesitated to do anything for the advancement of science which not only could be of no possible advantage to themselves, but might involve them in serious difficulties.

German anatomists had recently adopted a report prepared with the co-operation of representatives of other European countries, with the idea of establishing a more satisfactory and at the same time more scientific nomenclature than was at present in use. It was to be decided whether their report was satisfactory or not and, if it was, whether we should join hands with our foreign colleagues or, if it was not satisfactory, whether we could devise an American nomenclature which should be distinctly superior to that at present in use.

The Supply and Preservation of Anatomical Material.—Dr. J. Ewing Mears, of Philadelphia, Dr. Joseph D. Bryant, of New York, and the President, after carefully considering this subject and receiving a large number of replies in answer to a circular letter sent generally throughout the United States and Europe to professors of anatomy, presented the following summary:

1. Anatomical material is received wholly under the provisions of the law in thirty States and countries; in part under law in seven, and without law in five.

2. The provisions of the law are satisfactorily complied with in ten, and fairly so in ten others. The number in which the provisions are not satisfactory is twelve, while no replies were received from ten.

3. The material received had been said to be in good condition in twenty reports, only fair in twenty-one, and distinctly bad in one.

4. Carbolic acid stands first among the preservatives, with glycerin and arsenic next. All three of these agents are best employed in combination. Then, in their order of usefulness, come chloral hydrate, chloride of zinc, and the bichloride of mercury. Alcohol, either pure or in combination, carbonate of potassium, bicarbonate of sodium, chloride of sodium, methyl spirit, formalin, nitrate of potassium, brown sugar, and boric acid are also employed.

The great objection against the use of cold storage and formalin is the expense involved. A solution of chloride of zinc in a strength of fifty per cent. and of neutral reaction, while it successfully preserves subjects, has the great objection of hardening the tissues and causing a change of color. A number of useful formulæ for the preservation of subjects had been forwarded to the committee.

5. Injections are made into the heart in two institutions, into the common carotid artery in nineteen, and into the common femoral in five.

6. The cost of receiving and preserving the material varies from $1 to $25.

7. The number of students assigned to each subject varies from four to sixteen.

The committee's conclusions were as follows:

1. Anatomical material for the promotion of medical science should be obtained wholly under legal enactment. The provisions of the law should be compulsory upon all officers of State and county institutions and municipal governments.

2. Of the anatomical laws which are in force in this country the committee is of the opinion that the law of the State of Pennsylvania is the best.

3. The committee believes that it would contribute to the best interests of anatomical teaching in this country if action were taken by the association to secure the enactment in every State of a law controlling the collection and distribution of anatomical material, and it heartily recommends such action.

4. No perfect method of preservation has as yet been secured. The cold-storage plan approaches nearest to perfection, and, if some method could be adopted whereby a general plant would make it possible for several institutions in a large city to use the same apparatus, such a method would become of practical value.

Dr. Burt G. Wilder, of Ithaca, N. Y., said that after an experience of over twenty-seven years he was wedded to the use of alcohol. Brain tissues, he found, were best preserved by a combination of formalin, mercury bichloride, and salt. For muscles and viscera alcohol had been found the best preservative. There were two objections to its use: First, the cost, and, second, the property which it had of bleaching the tissues.

Dr. G. B. Huntington fully agreed with Dr. Wilder in re-

gard to alcohol. He recommended also the cold-storage plan, which, after an experience of three years, had been found to give good results. Any injection should be made before freezing. Immersion in cold water was the best method of removing ice from the interior of the body, and hastened the uniform melting of the parts. Arsenite of sodium was used chiefly for washing the blood out of the body. Injections were made into the carotid artery, and the blood was allowed to flow until the water which made its escape was no longer tinted with blood.

Dr. BEVAN said that he had had excellent results with a combination of cold storage and a preliminary injection of alcohol, glycerin, and mercury bichloride. In handling the bodies while in cold storage he made use of a pair of tongs which can be made by any blacksmith for about one dollar in such a way as to fit into the external auditory meatus of each side. He had found a solution of formalin in Müller's fluid to be useful in the preservation of brain tissues; the substance so prepared hardened rapidly and might be used for class demonstration. For as long a time as three days the color was well preserved, and it was possible to distinguish the gray and white matter at a distance of fifty feet. He used a five-per-cent. solution of formalin in Müller's fluid, enough of the solution being employed to immerse the specimen.

The Myology of Lemur Bruneus.—Dr. GEORGE S. HUNTINGTON, of New York, read a communication on this subject.

The History of the Ciliary Muscle.—Dr. FRANK BAKER, of Washington, read a paper on this subject. This muscle, he said, was divided into two parts. One set of fibres was directed meridionally along the eyeball, and the other set equatorially. The former portion had received the name of Brücke's muscle, or Bowman's muscle, because it was usually supposed that the first description of this part had emanated from one or the other of these anatomists. The second portion had been called Müller's annular muscle, after Heinrich Müller, who had described it in 1857. Bowman had given a clear description of this muscle in his lectures on the parts concerned in operations on the eye, published in 1849. Brücke, in May, 1846, had given it the name of tensor chorioideæ. Of the two descriptions Bowman's was much the better. Dr. William Clay Wallace, an American, should, however, be given credit for a description of this muscle which he had published in Silliman's *Journal* for 1835. The same writer had mentioned the subject again in his *Treatise on the Human Eye*, published in New York in 1839. In 1844 he had described in a series of lectures which appeared in the *Boston Medical and Surgical Journal* the muscular fibres of the structure.

Eustachius, between 1520 and 1574, although unable to demonstrate the presence of muscular fibres in the ciliary body, had divined their presence. His celebrated copper plates, which had disappeared in a strange way after his death and been lost to the scientific world for upward of a hundred and fifty years, showed a number of structures a description of which had been improperly ascribed to other observers. Thus had the great rival of Vesalius been robbed of much of the glory which would have attended an earlier publication of his work. Falloppius had believed that this structure was simply ligamentous, and in that way had differed with Eustachius, one of whose figures plainly showed the radiating ciliary processes surrounding the iris.

Our anatomical forefathers had a clear idea of the ciliary muscle, and it was not strictly correct to give all the credit for a thorough description of these parts to those observers whose names had been attached to the ciliary muscle.

(*To be concluded.*)

Book Notices.

Functional and Organic Diseases of the Stomach. By SIDNEY MARTIN, M.D., F. R. S., F. R. C. P., Assistant Physician and Assistant Professor of Clinical Medicine at University College Hospital, etc. With Fifty-seven Illustrations. Edinburgh and London: Young J. Pentland. Philadelphia: J. B. Lippincott Company, 1895. Pp. xiii–505.

THIS is an excellent treatise on diseases of the stomach. Its only rivals in English would seem to be the translations of Ewald's work. It is as extensive a study of the stomach and its diseases as that classic, and in some respects it is more satisfactory to read, for in Martin's work we find an ease and fluency of writing which make a sometimes abstruse subject very interesting.

The subject is treated carefully and the ground is well covered, while the classification of material is simple and convenient for reference.

Of course, in a monograph of this size, there must be accidental omissions or even statements which will not meet with general approval. For example, under the heading of Gastric Ulcer, not only is there an absence of reference to the diagnosis between the hæmorrhage from the stomach due to simple anæmia and that due to ulcer, but this statement is made (page 433): "In a young woman, the subject of chlorosis, or even without chlorosis, where there is no renal disease and no cardiac disease, the presence of localized epigastric and dorsal pain, with localized tenderness in these regions coming on after food and accompanied by vomiting, giving relief to the pain, is sufficient for the diagnosis of gastric ulcer, whether hæmatemesis be present or not. On the other hand, with such patients, hæmatemesis may be the first symptom noticed, and its occurrence, even with slight dyspeptic symptoms, is sufficient for diagnosis." These statements are far too sweeping and can hardly be borne out by facts. The tendency of many physicians is to make the erroneous diagnosis of ulcer of the stomach on just such data.

The article on the diagnosis of cancer of the stomach is excellent. Among other things, the author says: "There does not appear to be any reason why the contents of the stomach should not be examined as frequently and carefully as the urine. In the diagnosis of Bright's disease the examination of the urine generally gives important results and is essential, but some cases of Bright's disease . . . may be diagnosed without an examination of the urine, and albuminuria may be absent. Similarly with the cancer of the stomach, some cases can be diagnosed by the symptoms and physical signs in the abdomen and some can not; and in these latter cases the examination of the process of digestion and the stomach contents is not only of very great value but is essential for the diagnosis."

The book is handsomely printed and the illustrations are excellent.

A Manual of the Practice of Medicine. By GEORGE ROE LOCKWOOD, M. D., Professor of Practice in the Woman's Medical College of the New York Infirmary, etc. With Seventy-two Illustrations in the Text and Twenty-two Full-page Colored Plates. Philadelphia: W. B. Saunders, 1895. Pp. 7 to 935. [Price, $2.50.]

So many "manuals" and "text-books" have appeared in the course of the last few years that one finds considerable difficulty in seeing the necessity which calls for the production of any more, and it is also often difficult to find any new method or new style to commend. In Dr. Lock-

wood's book, however, we have a work of positive merit, and one which we gladly welcome. The author states that the aim of this manual is to present the essential facts and principles of the practice of medicine in a concise and available form. This he has succeeded in doing most admirably. The book is fully up to date in regard to all the recent progress in medicine, and yet no time is wasted on theoretical or debatable topics. The author's style is clear, concise, and forcible, and his descriptions of disease are sufficiently complete. A careful examination of the sections on many subjects taken at random throughout the book shows that no important matter has been omitted. A feature worthy of notice is the number and excellence of the temperature charts.

It is a book which, while claiming recognition only as a "student's aid," will be found satisfactory as a manual of ready reference to the physician also. The paper and type are excellent, and the charts and chromolithographs well printed; the other illustrations are not so good.

Handbook for Hospitals. By Abby Howland Woolsey. Member of Committee on Hospitals, etc. Third Edition. New York: G. P. Putnam's Sons. London: The Knickerbocker Press, 1895. Pp. iv–267.

The third edition of this valuable little book differs but slightly from its predecessor. Some modernizing has been done, especially in the addition of a few footnotes and the insertion of recent statistics, but few alterations have been made. We can not speak too highly of the work, which, though small in size, is wonderful in its completeness. It is scarcely an exaggeration to say that in it will be found everything which concerns the hospital, not only in its construction, but also in its management, even to the smallest detail. That the work is reliable need not be said; that it is so thoroughly practical and that it is so free from unnecessary technicality are among its strongest features.

Essentials of Vegetable Pharmacognosy. A Treatise on Structural Botany. Designed especially for Pharmaceutical and Medical Students, Pharmacists, and Physicians. Part I. The Gross Structure of Plants. By Henry H. Rusby, M. D., Professor of Botany, Physiology, and Materia Medica in the College of Pharmacy of the City of New York. Part II. The Minute Structure of Plants. By Smith Ely Jelliffe, M. D., Professor of Pharmacognosy in the College of Pharmacy of the City of New York. With Five Hundred and Sixty Illustrations. New York: D. O. Haynes & Co., 1895. Pp. 149.

It is all very well for an author to inscribe his work as designed for this or that class of humanity, and writers upon medicine and kindred subjects, especially (and curiously enough) if their teaching is specialized, are wont to select as the object of their "designs" either the medical student or the "busy practitioner." So far as the value of a book is concerned, however, it is of far more importance to know for whom it is adapted than for whom it is designed; and, of the vast number of specialized treatises whose authors fondly think them specially suited to one and perhaps to both these classes of victims, we venture to think that those which truly are thus adapted are but a small percentage of the whole. It is one thing for the specialist, brimful of enthusiasm for his little segment, to design his teachings for the use of the medical student and the physician, but it is quite another for them to find his teachings useful. It is so with the volume under consideration. That the pharmaceutical student and the pharmacist may find it valuable we can readily believe, but that it is adapted to the uses of medical students and practitioners as much as to those of pharmaceutical students and practitioners we doubt. To him who wants information upon the structure of plants the book will be useful, whether he is a medical man or not. So far as the work itself is concerned, it is excellent. It is divided into two parts—one which treats of the gross structure of plants, the other which concerns their minute anatomy. The arrangement is unusually good and the matter simply and clearly presented. We had almost called the book interesting, and, indeed, as compared with other works of a similar kind, it is. We have no doubt that the botanical enthusiast will read this book with enjoyment, and perhaps the medical student and the physician too, if they have the time.

Lehrbuch der physiologischen Chemie mit Berücksichtigung der pathologischen Verhältnisse. Für Studirende und Aerzte. Von Richard Neumeister, Dr. med. et phil., Professor an der Universität Jena. Zweiter Theil. Die thierischen Gewebe und Flüssigkeiten. Jena: Gustav Fischer, 1895. Pp. x–420. [Preis, Mark 8.50.]

It is to be regretted that lack of space prevents the review which this work deserves. Though the book partakes largely of the nature of a review or *résumé* of the literature of the subject, there is much of Neumeister's original work included in it. It contains separate chapters on the chemistry of muscle, bone, and cartilage, the nervous system, the skin and its secretions, the glands, the blood and lymph, urine, and milk. There is so much to discuss that it is difficult to select any one topic. The question, however, as to the presence of lactose in the urine of puerperal women, at present much talked of, is given two pages, and directions are given for tests which at present must answer for the identification of milk sugar. The entire chapter on the physiological and pathological chemistry of urine is full of interesting material and is as comprehensive as a text-book.

In view of recent work on lumbar puncture, Neumeister's chapter on the chemistry of the cerebro-spinal fluid will prove interesting reading. It is full and embraces many new details.

Enumeration of the virtues of each individual chapter would lead the reviewer too far. Suffice it to say that this is a work for the scientific physician's library, and it should be within reach of the chemist, the physiologist, and the pathologist. The book is well printed on good paper and the style is pleasing.

Die Physiologie des Geruchs. Von Dr. H. Zwaardemaker, Stabsarzt-Docent in Utrecht. Nach dem Manuscript übersetzt von Dr. A. Junker von Langegg. Mit 28 Figuren im Text. Leipzig: Wilhelm Engelmann, 1895. Pp. vi–324.

This contribution to our physiological knowledge of the sense of smell is most exhaustive in its premises and deductions. A vast number of experiments were performed by the author to establish the means and limits of the olfactory sense. He gives three mechanical explanations of the methods by which odors are perceived—by the food, by the stream of air constantly entering the nose and affecting the terminal ends of the olfactory nerves, and by diffusion. The normal and abnormal limits of the smelling sense are thoroughly discussed, and the author has an excellent chapter on the Compensation of Smells. The diagnosis of odors, the time of perception, and fatigue of the sense furnish material for an interesting chapter. In the appendix there is a discussion of

the sense of smell in the lower animals, with special reference to their search for food and, with too little detail, to sexual selection. An additional chapter is devoted to a clinical determination of the sense of smell. A lengthy bibliography concludes the volume.

The work is very well written and bears evidence of careful and long-continued study. To those interested in physiological work, Zwaardemaker's book may be conscientiously recommended.

BOOKS, ETC., RECEIVED.

A Manual of Physiology. With Practical Exercises. By G. N. Stewart, M. A., D. Sc., M. D. Edin., D. P. H. Camb., Professor of Physiology in the Western Reserve University, Cleveland, etc. With Numerous Illustrations, including Five Colored Plates. London, Paris, and Madrid: Baillière, Tindall, & Cox, 1895. Pp. 796.

Galen: Two Bibliographical Demonstrations in the Library of the Faculty of Physicians and Surgeons of Glasgow, December 9, 1891, and March 30, 1893. By James Finlayson, M. D., Physician to the Glasgow Western Infirmary, etc. Glasgow: Alexander Macdougall, 1895. Pp. 5 to 55.

The Functional Examination of the Eye. By John Herbert Claiborne, Jr., M. D., Instructor of Ophthalmology in the College of Physicians and Surgeons, New York, etc. With Twenty-one Illustrations. Philadelphia: The Edwards & Dcoker Company, 1895. Pp. 9 to 96. [Price, $1.]

Transactions of the Medical Society of the State of North Carolina. Forty-second Annual Meeting, held in Goldsboro, N. C., on May 14, 15, and 16, 1895.

Micro-organisms in the Healthy Nose. By St. Clair Thomson, M. D., and R. T. Hewlett, M. D., of London. [Reprinted from the *Medico-chirurgical Transactions.*]

Eczema of the Hands or Fingers in Ordinary Out-patient Practice. By P. G. Unna, M. D., of Hamburg. [Reprinted from the *Medical Annual.*]

Inflammation and Chemotaxis. By P. G. Unna, M. D. [Reprinted from the *St. Louis Medical and Surgical Journal.*]

Ueber Purpura Senilis. Von Dr. P. G. Unna. [Separatabdruck aus der *Wiener medizinische Presse.*]

Ueber Kaseinsalben. Von Dr. P. G. Unna. [Sonderabdruck aus der *Monatshefte für praktische Dermatologie.*]

Die Hand- und Fingerekzeme in der Armenpraxis. Von Dr. P. G. Unna. [Sonder-abdruck aus der *Monatshefte für praktische Dermatologie.*]

Mundpflege und Kali chloricum. Von Dr. P. G. Unna. [Sonder-abdruck aus der *Monatshefte für praktische Dermatologie.*]

Ueber mucinartige Bestandtheile der Neurofibrome und des Centralnervensystems. Von Dr. P. G. Unna. [Sonderabdruck aus der *Monatshefte für praktische Dermatologie.*]

Adeps lanæ in der Praxis. Von Dr. P. G. Unna. [Sonderabdruck aus der *Monatshefte für praktische Dermatologie.*]

Zur Farbung der rothen Blutkörperchen und des Pigments. Von Dr. P. G. Unna. [Sonder-abdruck aus der *Monatshefte für praktische Dermatologie.*]

Die Darstellung des Fibrins. Von Dr. P. G. Unna. [Sonder-abdruck aus der *Monatshefte für praktische Dermatologie.*]

Ueber spezifische Farbung des Mucins. Von Dr. P. G. Unna. [Sonder-abdruck aus der *Monatshefte für praktische Dermatologie.*]

Ueber Piedra nostras. Von Dr. P. G. Unna. [Sonderabdruck aus der *Deutsche Medizinal-Zeitung.*]

Phlyktænosis streptogenes, ein durch Streptokokkenembolisation erzeugtes, akutes Exanthem. Von Dr. P. G. Unna. [Sonder-abdruck aus der *Deutsche Medizinal-Zeitung.*]

New Inventions, etc.

AN ADJUSTABLE SELF-RETAINING NASAL SPECULUM.*

By Sam Goldstein, A. B., M. D.,
ATTENDING SURGEON, NEW YORK THROAT AND NOSE HOSPITAL, ETC.

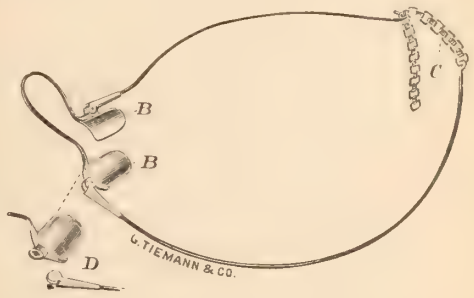
These instruments have been devised and made for the purpose of combining nasal specula both for making anterior examinations and for use in all operative procedures within the nasal channels.

Many and various are the nasal specula which have been devised, especially since rhinology has gained such a firm foothold in the realm of the specialties.

Without doubt each instrument has found its best use in the hands of its inventor, but that surely appears to be no plausible argument why all new instruments as well as new ideas in medicine should not be placed before the profession for impartial criticism.

If the instrument or idea is productive of no further good than to induce criticism, there is real value even in that; but often the instrument, faulty perhaps as first presented by its originator, may, by the judicious use of some operator, receive modifications which raise its utility to the standard first purposed.

I therefore hardly feel the need of offering an apology for the presentation of another instrument.



These specula combine the qualities of lightness, cleanliness (as they can easily be taken apart), economy (there being a set of specula in three sizes with one frame attachment), and general utility, such as I have found in no other operating speculum. On either side of the speculum is a perforation, or rather one half of a French lock, into which fits the corresponding part of the lock at each proximal end of the spectacle frame. A simple light wire loop connects the two blades of the speculum.

The spectacle frame, for such to a certain extent at least it resembles, is composed of two portions: At the proximal ends are the tongues of the French locks, made to fit into the perforations on either side of the speculum; at the distal end of one part of the frame the wire is bent booklike, to be attached to one of the links of the chain placed at the distal end of the corresponding portion of the spectacle frame; the chain is provided with numerous links, so as to make the frame adjustable to heads of any circumference.

When any size of the nest of specula is to be used for making anterior examinations, unlock the frame, which latter part is again simply locked to the speculum when it is to be used for operating.

The wire loop connecting the speculum blades should be placed uppermost when one is operating, and when one is

* Presented before the Metropolitan Medical Society, September 24, 1895.

examining the loop will take the place of the usual speculum handle.

When one is about to operate, the blades of the speculum are placed in the nostril, and the catch of the one portion of the frame is caught in a link of the chain at the back of the patient's head, thus making the speculum self-retaining, and both of the operator's hands are free for work. My sincere thanks are due to Messrs. George Tiemann & Co. for the able manner in which they have furthered my plans, especially in reference to the little weight and great strength of the material used in the manufacture of the instrument.

166 East Ninety-third Street.

Miscellany.

A Clinical Test of Some of the So-called Organic Extracts.—The *Boston Medical and Surgical Journal* for January 16th publishes an article on this subject by Dr. Frederic Coggeshall, who gives the following results which he obtained in twenty-three cases with the employment of cerebrine, ovarine, cardine, and testine made according to Dr. Hammond's formulas; cerebrin, said to be the same as Dr. Hammond's cerebrine; testiculine made by Morgan, of Philadelphia, and by Gibier, of New York; and, finally, a test solution made by the author himself, which consisted of seventy parts of a one-per-cent. solution of boric acid in boiled and filtered water and thirty parts of glycerin. As far as possible, he says, he selected cases to form six groups, each group consisting of fairly typical examples of the same disease: 1. Six cases of irritable and irregular heart in young men without any organic lesions as far as could be discovered. Three of these cases were directly traceable to the abuse of tobacco. In four of them cardine was employed, and in two the test solution. 2. Six fairly typical cases of simple neurasthenia in young women. Two of these patients were treated with cerebrine, two with cerebrin, and two with the test solution. 3. Six cases of dysmenorrhœa, which the history of the symptoms and the most careful examination that could be made, says the author, led him to regard as being of the ovarian type. Four patients were treated with ovarine and cerebrine, and two with the test solution. 4. Three cases of sexual hypochondriasis from masturbation, in which the usual symptoms of mental anxiety and depression, with complaints of loss of memory, failing power of application, etc., were observed. These patients were treated with cerebrine and testine. 5. Two types of paralysis agitans in which Morgan's and Gibier's preparations of testiculine were employed.

In none of these cases, says the author, except those in the fifth group, was any other treatment given at the same time, with the exception that the patients of each group who received the test solution received also more or less informal suggestion. This was carefully avoided in the cases where the organic extracts were employed. In no case was the treatment continued for less than a month. The dose of Dr. Hammond's preparation was five minims, given hypodermically, daily, for the first two weeks; this was doubled in the third week, and again doubled in the fourth week. The test solution was given in exactly the same way.

With regard to the results, says Dr. Coggeshall, the essential points were as follows: In the cases of ovarian dysmenorrhœa the treatment was begun in each just at the end of a menstrual period, so that the next period would fall in the fourth week of the treatment. The results in all these cases were absolutely negative. Four of the patients have since greatly improved under other treatment. One patient who was treated with the test solution did not improve at all under any treatment, and suffered so much that oophorectomy was advised as the only means of relief. The sixth case was entirely lost sight of.

Among the cases of cardiac trouble there were three patients who had distinctly tobacco hearts, says the author, and they began to improve toward the end of the month. Another patient who was treated with the test solution improved as much as the others. The use of tobacco was, of course, he says, stopped in these cases, but the patients' improvement was no greater than he has repeatedly seen in similar cases without treatment. The other cardiac cases could not be so easily traced to an obvious cause, but the use of tobacco, coffee, etc., was stopped also. None of the patients showed any appreciable improvement.

In the neurasthenic and masturbation cases, says Dr. Coggeshall, the patients were advised as to the general regulation of diet, exercise, and sleep; cold sponge baths were also ordered. Without this, he says, no medicine could be expected to do its best work. One of the neurasthenic patients, a very imaginative girl who was highly susceptible to the effects of suggestion, showed a marked improvement under the employment of cerebrin for the first two weeks, but during the last two weeks she lost all she had gained. The other patients showed no marked effects at any stage of the treatment. Two of the neurasthenic patients have since improved decidedly from the employment of gymnastics, tonics, and forced feeding, with a free use of suggestion, but without direct hypnotism. Two others also have improved very greatly since the animal extracts were given up for other treatment.

In all these cases, says Dr. Coggeshall, except those in which the test solution was employed, everything was avoided which might help the effect of the organic extracts by suggestion, as the apparent improvement in such cases might have been due to the hope and expectation excited by a treatment that impressed the imagination and by the assurances of a cure given by the physician. The patients were simply told that they were to receive a tonic which was supposed to act better if given hypodermically.

In the cases of paralysis agitans the patients were suffering too much to justify the neglect of any means for their relief, and tonics, especially a mixture of hyoscyamus and nux vomica, were given, and massage was used in one case. The treatment by injection was kept up for two months in one case; in another the trial was still further prolonged. The injections were continued for four months at one time, and, after an interval of three months, were renewed for four months more at the request of the patient, who fancied that she saw some benefit from the first trial. The author states that he could see no benefit in either case from the injections.

With regard to the physiological effects of these extracts, he says, in almost all the cases the pulse rose from five to twenty beats a minute within a quarter of an hour after the first two or three injections. The subsequent injections ceased to show any effect on the pulse. The same effect was noted after the administration of the test solution. In some of the most nervous patients the temperature rose or fell from one tenth to five tenths of a degree after the first few injections. These symptoms also disappeared after subsequent injections. In several cases the breathing was quickened by from one to four respirations a minute. All these symptoms occurred in some of the patients who received the test solution.

In two of the cases of cardiac disease sphygmographic tracings were taken before and after the first injections, and again at the end of two weeks. They showed no appreciable or constant change. In the same cases the author succeeded in obtaining a fairly trustworthy measurement of the daily quantity of urine, and he made five examinations of specimens in each case at intervals of a week, and he found that the quantity, the specific gravity, and the percentage of urea were not affected. The only changes that occurred were within the normal variations of health.

Dr. Coggeshall thinks that the obvious conclusion to be drawn from these facts is that these so-called organic extracts are physiologically inert and therapeutically worthless.

The Value of Voluminous Intestinal Enemata of Warm Saline Solution in Post-partum Hæmorrhage.—The following case is related by Dr. John P. McNeill, of Burwood, in the *Australasian Medical Gazette* for December 20th: He was called to attend a woman upon whom an abortion had been performed. He found her practically dead from hæmorrhage; respiration had ceased; the cardiac action had been reduced to faint muscular contractions, and there was no pulse anywhere. She was absolutely unconscious, her body was cold, and the power of deglutition, as well as sensation, was completely gone. Chiefly, says the author, for the sake of doing something, he poured from about one to two gallons of tepid water into a large basin, added a teaspoonful of salt to it, and filled the large intestine to tension limits with a long tube which was attached to a syringe. He removed the fœtus, clots, etc., by rapid digital movement, and then employed artificial respiration. He also injected hypodermically both strychnine and ether, but with apparently no result. After fifteen or twenty minutes the patient began to breathe, and was soon able to swallow a stimulant. She made an uninterrupted recovery.

In cases of post-partum hæmorrhage, says Dr. McNeill, the treatment by transfusion, or sterilized intravenous saline solutions, has long received well-merited attention.

He believed, however, that the value of voluminous intestinal enemata of warm water and salt in such cases is insufficiently appreciated, and that such treatment applies to military and other surgery, as well as to obstetric practice. But, he says, to be effectual, the tube must penetrate the sigmoid flexure and command the absorptive powers of the descending, transverse, and ascending colon; therefore a long tube must be used, and the injection pushed to tension limits.

The old pathological axiom that powers of absorption are in inverse ratio to powers of pressure comes into force in an astonishing manner in the case of a depleted arterial system, as the foregoing case illustrates.

Dr. McNeill thinks that the absorptive capacity of the large intestine has not been sufficiently recognized as an alternative (on the spur of the moment) to transfusion or intravenous injection. A great many persons, he says, die every year from loss of blood, and if a long enema tube should prove to be a fair substitute for an expensive and troublesome transfusion apparatus, a rather important departure in surgery has been made.

He has no doubt whatever, he says, that the voluminous injection saved the patient in this case, and, as evidence, he states that none of the large quantity of water was ever seen again. None was returned. In two days she had a solid evacuation, but all that gallon or so must have been absorbed into her circulation in a very short time, and aided by artificial respiration set her heart going again.

Death due to Cocaine Poisoning.—In the January number of the *Quarterly Medical Journal for Yorkshire and the Adjoining Counties* Mr. J. Sadler Curgenven relates the following case of cocaine poisoning: He was called to see a lady who had taken a dose of cocaine. On his arrival he found her partially cyanosed, the lips and face being of a decidedly bluish tint, and with a very anxious expression; the respiration was rather shallow, but not noticeably more rapid than normal; the pulse was fast and decidedly weak. She was unable to answer any questions put to her, and the author gathered from her maid that she had called her and told her that she had swallowed some cocaine. Before his arrival the maid had given the patient mustard and water, but without causing vomiting. Mr. Curgenven then gave her a tenth of a grain of apomorphine hypodermically, but no result was obtained, and about fifteen minutes later two or three attacks of violent twitching supervened, which were followed by a violent tetanic spasm affecting the whole body. During this time respiration was suspended and the pulse accelerated, although exceedingly thready. The author washed out the stomach, but the convulsions continued, and in one of them the lady died. Death occurred, so far as he could ascertain, in from forty to fifty minutes after the dose had been swallowed.

Twelve months before this, says the author, he had prescribed an ounce of a solution of cocaine hydrochloride, containing thirty grains of the salt, for the relief of pain in the gums from carious teeth; of this quantity two thirds were used at the time, and it was the remaining third which the patient swallowed by mistake. The dose, therefore, he says, did not consist of more than ten grains, yet the effects were so severely toxic that death occurred within three quarters of an hour after its ingestion.

It is known, says Mr. Curgenven, that, if a simple solution of cocaine is kept for any length of time, a mold grows in it. To this symptoms of poisoning have been attributed, and therefore, he says, he is doubtful as to whether the fatal result in this case was due to the ten grains of cocaine hydrochloride, to the mold, or to the toxines generated by the mold. The remaining third of the solution had been kept for twelve months in a warm bedroom, and this, he thinks, favored the growth of any fungous substance to its full extent, and, provided the mold is a poison, it contained as strong a dose as it was possible to obtain in the given amount of the solution.

The Abuse of Quinine.—This was the subject of an article by Mr. James Harris, of Madras, which appeared in the *Indian Medical Record* for December 16th. Quinine, says the author, is one of the greatest blessings in medicine, and a peerless specific in malarial fevers. The magic disappearance of fever in prolonged cases after the administration of this drug is well known.

Malarial fever, however, he says, should be carefully distinguished from other kinds of fever before resorting to quinine. Distinct rigors followed by fever, and recurrence with well-timed intermission, will more or less put the practitioner on the alert. Its administration in every kind of fever, when the temperature has been brought low by other antipyretics, should be condemned. A careful observation undoubtedly shows that in many cases of fever quinine raises the temperature immediately after its administration.

The abuse of quinine reaches its climax when its heroic admirers, believing the manifestation of all its physiological symptoms to be the surest indication of its clear action, push it to such a dangerous extent as to produce deafness and

dullness of general perception. Several painful cases, says the author, have come under his observation in which the bright and intelligent expression of the face has been changed by quinine to a dull and vacant gaze.

The susceptibility of some patients to its action is so great, he says, that a few grains completely upset them, producing a series of symptoms which alarm the patient and puzzle the doctor. It is also a scourge in the hands of the native doctors, whose ignorance of diseases assumes a dangerous shape when armed with a weapon which, though invaluable in itself, requires much caution in its use.

Owing to the abuse of this drug, says the author, it is hated and dreaded by the natives, who attribute all sorts of evil qualities to it. Many of them who place themselves under the treatment of English physicians make it a condition that quinine is not to be administered.

In the weak and debilitated state of a patient, says Mr. Harris, when his nerves are exhausted and excitable, the quinine, which is administered when the temperature is low with the idea of fixing it, often acts so quickly as to produce all the symptoms of quininism, which are completely overlooked by the physician, who still pushes on the drug. Administering quinine even in malarial troubles of long standing requires caution, as a large quantity in a patient who is already bloodless tends to destroy the few scattered surviving red corpuscles, making his case less hopeful and more difficult.

If the weak, fluttering heart, says the author, the want of assimilative power, the anæmic condition, and the state of the liver and kidneys are attended to, only very small doses of quinine will be required to bring about astonishing results, and, he adds, in many cases the fever will leave the patient if the foregoing conditions are treated without resorting to the employment of this drug.

The Removal of the Whole Epiploon from the Sac of a Strangulated Hernia followed by Recovery.—The *Lancet* for January 11th publishes an account of a case which came under the observation of Mr. W. J. Collins, of London. The patient, a man, thirty-eight years old, was admitted under the author's care into the London Temperance Hospital on April 24, 1895. Although otherwise a healthy man, says the author, he had suffered from a reducible right inguinal hernia for eighteen months, for which he had worn a truss. Two days before his admission, when walking home after a heavy meal, the truss suddenly broke and the hernia came down with a rush. He was unable to effect reduction, began to vomit, and experienced great abdominal pain. On admission he was found to be suffering from frequent green vomiting; no motion had been passed for two days, and his temperature was 98·8° F. The abdomen exhibited partial distention and an accentuated mesenteric line; the right side of the scrotum was distended to its maximum capacity by a dull, slightly elastic, irreducible swelling ten inches in circumference, without impulse, and passing into and distending the external ring. The patient was placed under chloroform, and, taxis being unavailing, says Mr. Collins, he exposed and opened the hernial sac. A little fluid escaped, and he was confronted with an enormous mass of omentum in fringe-like laminæ occupying more than seven eighths of the sac. At the upper part, and concealed by the omentum, there was a knuckle of deeply congested and slightly shaggy small intestine. After examination this was reduced. To reduce the omentum was a task, he says, that might give pause to Sisyphus; moreover, inspection showed tha in parts there was evidence of bruising, which militated against the attempt. To deal with such a mass piecemeal appeared to him to be less satisfactory than to treat it *en masse* as a pedicle, so he tied it securely with the largest-sized silk and cut off what appeared to be practically the whole, or nearly the whole, epiploon. He thought it well to fix the pedicle in the ring by a few sutures. He then dusted on iodoform and sutured the wound without drainage, dressing with cyanide gauze. On the 29th the wound was dressed for the first time. The temperature had not risen above 100°; there was no sickness, and flatus was passed. The wound was doing well, with the exception of a little pus around one of the upper suture holes. By May 1st some eczema had appeared around the wound, and also some swelling about the scrotum; the patient's general condition, however, was excellent. On the 7th the bowels were acting, and the wound was healing, except at the upper end; and on the 14th the deep suture came away, and the wound closed up. On May 20th the patient was discharged with a firm cicatrix.

When seen in August last, says Mr. Collins, the patient was in good health, and there was no hernial protrusion. An examination of the removed omentum showed it to be practically the whole epiploon. Its central cavity was easily demonstrable.

The Treatment of Burns of the Eyelids.—The following formulas, which are published in the *Journal des praticiens* for January 11th, are taken from Landolt's and Gygan's work, *Précis de thérapeutique ophthalmologique:*

Cocaine hydrochloride		45 grains;
Lanolin		75 "
Vaseline, Distilled water,	each	300 "

This preparation may be used for slight burns, or Carron oil or finely pulverized bismuth may be used.

For burns of the second degree one of the following may be employed:

1. Cocaine hydrochloride		23 grains;
Salol		45 "
Vaseline		375 "
2. Iodoform		60 grains;
Extract of conium		30 "
Carbolic acid		0·75 "
Rose ointment		450 "

Before the application of the ointment the blisters should be opened and carefully washed.

The Treatment of Nephritic Colic.—In the *Journal des praticiens* for January 11th there is an article on this subject in which the writer remarks that attacks of nephritic colic are but an episode in renal lithiasis. The danger of the disease rarely results from the pain, however severe it may be. The most painful attacks are not even those which are accompanied most frequently with the two great complications of nephritic colic, persistent anuria and uræmia. The other complications of lithiasis, renal calculus (with its accompanying hæmaturia, sufficient to cause anæmia, which simulates that of cancer), pyelitis, and pyelonephritis are also singularly graver even than attacks of nephritic colic. Rather frequently, also, these complications supervene without having been preceded by painful attacks. The abundant concretions may not, in reality, become lodged in the ureter, and consequently not cause acute attacks. But, if the painful attacks are not the fundamental element, they are so distressing that they become imperative indications for therapeutic measures. These indications, says the writer, have been summed up in a recent treatise on the treatment of diseases of the kidneys by M. Gaucher and M. Gallois.

The treatment of nephritic colic is very nearly like that of

pain in general. For example, plasters, to which laudanum has been added, are applied to the lumbar region, or, better still, to the abdominal wall. The heat acts as an antispasmodic and moderates the contractions of the ureter, and in this way favors the elimination of calculi. Extract of opium was given by Grisolle in doses of from three to six grains in twenty-four hours. If there is gastric intolerance, the opium or laudanum may be given in enemata. But the most rapid and the most convenient procedure for suppressing the pain is by injections of morphine. In this procedure, says the writer, the most careful precautions are necessary to prevent the subsequent abuse of this drug by the patients. The doses should be weak, and, although the intensity of the pain, which is the antidote of the opium, should bring about tolerance for morphine, it should not be forgotten that in nephritic colic the urinary secretion, and consequently the elimination of the morphine, is profoundly disturbed.

Extract of belladonna may be employed in suppositories, alone or combined with an equal quantity of opium. Belladonna, however, says the writer, acts less on the peristaltic contractions of the ureter. If in biliary lithiasis there is sometimes reason to fear that suppression of the contractions of the gall bladder arrests the progress of calculi, in renal lithiasis the same danger does not exist, and there are no special indications for employing belladonna in preference to opium.

Antipyrine taken by the mouth or by hypodermic injections may be useful. However, according to M. Robin, it increases the elimination of uric acid, and for this reason its employment should be restricted.

Phenetidine in doses of three grains may be useful, also exalgine, although the latter causes vertigo. Ammonium valerianate, in doses of from 0·8 of a grain to eight grains, either in potions, pills, or enemata, may be used in slight attacks of nephritic colic.

Chloral, especially in enemata, will occasionally be useful in cases of insomnia, and the following formula is recommended:

Decoction of marshmallow root	4·75 ounces;
Chloral hydrate	45 grains;
Sydenham's laudanum	10 drops.

This is to be administered in a tepid enema.

Inhalations of chloroform or of ether, says the writer, are especially useful and may be employed sparingly if the pains become too severe, but the physician himself should attend to the administration of these drugs. Finally, hot baths are often excellent means of arresting contractions of the ureter and of allaying the pain.

The Treatment of Urticaria.—In an article on this subject by M. Morain, published in the *Revue internationale de médecine et de chirurgie* for January 10th, the author states that, if the cause of this affection is discovered, its suppression very frequently brings about the disappearance of the urticaria. In rebellious cases the following measures should be resorted to for the general treatment: During the acute stage the patient should have a milk diet as much as possible. When the attacks become less intense the diet may be changed. Fish, shellfish, game, pastry, strawberries, gooseberries, cabbage, cheese, etc., should be avoided, but eggs, white meats, green vegetables, and fruit may be eaten. For drinks, weak alkaline waters, added or not to milk, and beer may be employed.

For the internal treatment of the cause of the urticaria, digestive troubles and constipation should be carefully attended to, if they exist. If disorder of the nervous system seems to be the cause, tepid douches, bromides, and valerian are indicated. If there is malarial poisoning, quinine in large doses may be given.

For the treatment of the urticaria itself, tincture of belladonna may be employed in amounts of from five to fifteen drops a day, or quinine in amounts of from eight to ten grains. M. Brocq, says the author, employs the following formula for a pill:

Quinine hydrochloride,	
Ergotine, each	0·75 grain.
Extract of belladonna	0·015 "
Glycerin,	
Excipient, each	q. s.

From six to sixteen of these pills are to be taken every day.

With regard to local treatment, says M. Morain, baths should be avoided, as they nearly always aggravate the eruption. It is well, however, to use very hot lotions consisting of a decoction of chamomile containing one per cent. of carbolic acid. In drying the skin it must not be rubbed harshly, but gently sopped. Afterward the entire surface may be powdered with starch, or the following ointment, which is used by M. Brocq, may be applied to the parts:

Carbolic acid or oil of peppermint, from 8 to 15 grains;	
Zinc oxide,	
Lanolin,	
Vaseline, each	300 grains.

Over this ointment starch is again dusted. It is also well to dust the bedclothing thoroughly with starch before the patient lies down.

In cases of chronic rebellious urticaria the waters of Vichy, Néris, Royat, Plombières, or Bourboule may be prescribed.

Exophthalmic Goitre Treated with Animal Extracts.—Dr. Robert T. Edes relates the following case, which is published in the *Boston Medical and Surgical Journal* for January 23d: The patient, a woman, thirty-four years old, had, several years ago, a goître described as exophthalmic, which was said to have been cured by electricity in two weeks. After much domestic care and worry she lost sleep, became nervous and hysterical, and suffered with neuralgia in her neck, her chest, and her arm. She was said to have pleurisy, but this, says Dr. Edes, he considers somewhat doubtful. When she entered the hospital she had typical exophthalmic goître. The eyeballs were prominent; there was a tumor in the neck, although not large, but perfectly evident; the pulse was rapid and irregular; and the patient was in a condition of great nervous restlessness, both bodily and mental. There was possibly a very slight systolic murmur along the left ridge of the sternum, and there was a very loud one over the right lobe of the thyreoid, but, with this exception and that of the violent throbbing of the carotids, there were no other physical signs. Her weight was a hundred and twelve pounds and a half, the blood color seventy-one, and the urine generally below the average, with urea less than three hundred grains a day.

About a month after her entrance, says Dr. Edes, she was put upon the use of capsules of dried thyreoid, which was continued nearly another month without any perceptible influence upon her condition or upon the secretions, urea and uric acid being quantitatively examined. Early in February she was put to bed and considerable doses of potassium bromide were given to her. In May and June she received hypodermic injections of nuclein prepared from spleen, and later

an extract of spleen prepared for the author by Parke, Davis, & Co. No favorable result, he says, was perceived, but a good deal of local pain and increased nervousness supervened. On the whole, however, says the author, she gained flesh and suffered less from restlessness; but the pulse was never recorded below 104, and the carotids were still throbbing with great violence.

On July 15th she began to take capsules of dried aqueoglycerin extract of the thymus gland, and generally used three of these a day, each of which contained a grain and a half. On August 5th she was feeling much better, although there were no obvious changes in the symptoms; and on September 7th she was discharged, relieved. She still continued to take the capsules.

She was seen again on November 18th, when she stated that she had stopped the use of the thymusine about four weeks after leaving the hospital. She had tried to work, but had not been able to accomplish anything. However, her general appearance was less nervous and her manner less excitable. The pulse was 108 and irregular. There was considerable throbbing of the carotids, but perhaps less than before. She was again provided with capsules to take twice a day, and told to report when they were gone. On December 6th the pulse was 92. She said she was better, and considered the swelling of the thyreoid less, and said that she felt able to work.

The number of cases, says Dr. Edes, of exophthalmic goître which have been reported as having been treated by thymus is by no means so large as might have been expected in these days of the popularity of animal extracts. It has, however, he says, been used, and with good results, in simple goître.

The Case of Mrs. Maybrick.—The following letter, signed "Lex," appeared in the *British Medical Journal* for January 11th:

"As you have lately referred to the case of Mrs. Maybrick as similar to that of Mrs. Robinson in all but the result to the patient (and the sentence passed on the prisoner), will you permit me to point out some other distinctions?

"1. In Mr. Robinson's case the attendant physician suspected poisoning from the symptoms. In Mr. Maybrick's case the two attending physicians entertained no such suspicion until the charge of poisoning was made by other persons.

"2. In both cases, when suspicion was aroused the fæces (and in Mr. Maybrick's case the urine) of the patient was submitted to analysis. In Mr. Maybrick's case no trace of poison was detected. In Mr. Robinson's mercury was found.

"3. In Mr. Robinson's case there was no evidence that the man was in the habit of dosing himself with mercury. In Mr. Maybrick's case there was evidence—strong at the trial, and now conclusive—that the patient was in the habit of dosing himself with arsenic.

"4. When Mr. Robinson was taken out of his wife's hands and placed in those of the trained nurse he recovered rapidly. When Mr. Maybrick (who had been doing pretty well up to that time) was taken out of his wife's hands and placed in those of the trained nurses, he sank and died rapidly, though the doctors regarded the case as hopeful when the change took place.

"5. Mrs. Maybrick's letter to Brierley did not imply that her husband's case was hopeless, but only that he was dangerously ill, which was also the opinion of several persons who saw him on the day that it bears date.

"6. Mr. Maybrick had made a will leaving everything away from his wife. It was not for her pecuniary interest that he should die before she had regained his confidence, and induced him to make a new will. He had some time previously insured his life for her benefit, which benefit he endeavored to cut down by the will; but it did not appear that she was aware of the fact, much less that she had induced him to effect the insurances.

"7. There seems to have been no medical evidence to the effect that the symptoms of Mr. Robinson's illness were not those of mercurial poisoning, or that mercury had been prescribed for him by the attendant physician. But there was medical evidence that Mr. Maybrick's symptoms were not those of arsenical poisoning, and arsenic had been prescribed for him by Dr. Humphreys.

"You seem to be unaware of the evidence in Mrs. Maybrick's favor procured since the trial. The pamphlets, now sent in separate envelope, may give you some information."

The Diuretic Action of Theobromine.—At a recent meeting of the *Société de thérapeutique*, a report of which appears in the *Progrès médical* for January 11th, M. Huchard stated that for the past two years he had employed theobromine to combat anasarca of cardiac and renal origin. This drug, he said, was not toxic; occasionally it might give rise to severe headaches in subjects who did not tolerate the drug if given in doses of forty-five grains, and sometimes nausea and vomiting. Theobromine, he said, seemed to have an influence on the renal epithelium and produced diuresis without notably increasing the arterial tension. It did not cause albuminuria, but increased it when it did exist. M. Huchard questioned whether this increase was not connected with the absorption of œdema.

Theobromine, he said, caused a more abundant diuresis than caffeine did, and a more rapid diuresis than digitalis. It had no cumulative effects. The doses varied from thirty to forty-five grains. M. Huchard recommended the following prescriptions: Forty-five grains in six pills for two days; sixty grains in eight pills for two days; and seventy-five grains in ten pills for two days. This made six days of treatment. He had frequently given a small dose of digitalin two or three days afterward. M. Huchard stated that he had also employed theobromine successfully in infectious diseases and in diseases of the liver.

Cantharidin as an Adjunct to Mercury.—At a recent meeting of the Hufeland Society of Berlin (*Dtsch. Med.-Ztg.*, January 9, 1896) Dr. Liebreich presented a patient in whom was exemplified the stimulating action of cantharidin. The man had syphilis, and had been treated with mercury without the least benefit until cantharidin also had been used, when the mercury had shown its usual remedial action and the syphilitic manifestations had subsided. At the time he was shown the man considered himself well and was pronounced cured. The same course was to be followed in the case of another patient, a woman, infected with syphilis.

Dr. Saalfeld said that he had treated a number of patients with mercury and cantharidin simultaneously. Some of them had manifestly had pulmonary tuberculosis, in which disease, as was well known, great caution was necessary in the use of mercury. In others of them syphilitic ulcers had defied an exclusive treatment with either mercury or iodide of potassium. The speaker had found that he could treat the tuberculous patients with ordinary doses of mercury without any harm resulting, provided he gave them cantharidin at the same time; and in both these groups of patients indolent ulcers that had before shown no tendency to heal had improved under the use of cantharidin.

Original Communications.

SOME CRITICAL AND DESULTORY REMARKS ON RECENT LARYNGOLOGICAL AND RHINOLOGICAL LITERATURE.

BY JONATHAN WRIGHT, M. D.,
BROOKLYN.

(*Fourth Paper.*)

IT will be remembered that our esteemed townsman Dr. Chappell published in the *New York Medical Journal* (March 30, 1895) a very interesting paper on the treatment of laryngeal tuberculosis by means of the submucous injection of creosote. It may be mentioned in passing that parenchymatous injections into tubercular lungs have been reported, and there is reference to the extensive literature of the subject by Wesener, in the *Centralblatt f. Bakteriologie*, vol. iv, 1888, p. 761, and vol. vi, 1889, p. 364. The exhibition at the Academy of Medicine of cases cured or benefited by Dr. Chappell was by itself very impressive.

Thost, in the *Monatschrift f. Ohrenheilk.*, February, 1895, reports six cases of spontaneous healing of laryngeal tubercular ulcers in patients in whom the hereditary and personal histories had given a favorable prognosis.

The following is a clipping from the *Medical Week:*

By experiments on patients in the wards of Dr. N. Simanovsky, professor extraordinary of laryngology at the Military Academy of Medicine at St. Petersburg, Dr. A. Spengler has ascertained that parachlorophenol (*The Medical Week*, 1894, pp. 336 and 552) is an excellent remedy in the treatment of tuberculosis of the larynx. Of twenty-six patients suffering from this affection who were treated by chlorophenol, ten recovered completely and in the others there was more or less marked improvement.

Paul Bergengrün (*Archiv f. Laryngol. und Rhinol.*, Bd. ii, Heft 2) relates the histories of seven cases of laryngeal tuberculosis which healed without surgical treatment. He used locally lactic acid and iodoform. One patient was curetted and the lesions healed not only where the parts of the larynx were curetted, but also where they were not. In one case he used tuberculin, which caused intense local reaction, but resulted favorably in the end.

There was a very interesting discussion at the meeting of the British Laryngological and Rhinological Association, which is fully reported in the *Journal of Laryngology* for October, 1895, on the surgical treatment of laryngeal tuberculosis. This question has been several times referred to in these reviews, and I have only to add that Krause is reported as having stated that all the tuberculous disease was removed in the patients operated on. Surely he did not mean us to take this literally. No one who has seen these tuberculous larynges laid open for examination on the post-mortem table, or who has made microscopic examinations of the process in the mucous membrane and submucous tissues, can believe that any endolaryngeal operation could be so complete as to destroy all the foci. It is possible that all may be removed that can be seen in the laryngoscope, but it is an exceedingly rare case of tuberculous laryngitis in which the whole lesion is visible.

There is one argument to be urged for the surgical treatment of tuberculous laryngitis which I have not seen brought forward by the advocates of the method, and that is the results that are reported of operations in tuberculous peritonitis, and also those more recently reported for tuberculous meningitis. In these cases nothing is done but to open and drain the cavities, and a large number of cures have been reported. Is it possible that the surgical procedure in some way stimulates the vital resisting powers of the system? The larynx, however, is not a closed serous cavity, and the argument is only apparently analogous.

The most encouraging part of the laryngeal work is the relief given to these patients from the atrocious pain. By removing the diseased tissue within sight and within reach it is exceedingly probable that the source of the pain is removed. The accessible parts are the movable parts, and the parts affected by the movements of deglutition. Dansac has described the great amount of nerve involvement in these infiltrations.

These gentlemen of high reputation have presented certain facts—*i. e.*, that some of the patients on whom they have operated have recovered, and a large proportion have been relieved of pain. Theoretical explanations or objections are perhaps not in place, but long experience has discouraged us. Accurate pathological knowledge has taught us how deep, how widespread the tuberculous infection is. We appreciate also that, although we have found a micro-organism whose presence is necessary to the lesion, the principal factors in the ætiology and in Nature's therapy are unknown. A careful study of the literature of the subject induces skepticism. Entirely too many cases are, according to reports, cured by entirely too many different methods of treatment.

Rethi, in the *Archiv f. Laryng. und Rhinol.*, Bd. ii, Heft 2, writes an interesting paper on the treatment and nature of ozæna, meaning thereby atrophic rhinitis with ozæna. He advocates searing the mucous membrane superficially with escharotics, the hot platinum knife, or chromic or chloracetic acid. He says that these patients finally all get well of themselves if they live long enough, presumably because the glands, which in their diseased state furnish an abnormal secretion, are finally all totally destroyed. He instances one case in which he observed the atrophic process starting *de novo*, and not from a previous hypertrophic condition. He regards the disease of the glands as the essential part of the morbid process, and the change in the epithelium and the venous sinuses as merely incidental.

We may gather from this very plausible and possible explanation of the process that he uses the cautery to destroy the glands. If we accept his idea of the pathogenesis, this would be a very rational procedure, except for one vital objection, and that is the inability to reach all of the diseased area. It is hard to understand how destruction of the glands within reach is going to destroy the crust and the odor if the others are left untouched.

Rethi, however, very justly remarks that extension of the process to the accessory cavities is the exception.

From the general tone of the paper I am led to believe that the results of treatment are not much better than many of us are accustomed to obtain by other means. They fall far short of the results reported by some recent writers. This latter modesty of assertion redounds to Rethi's credit.

Kalischer, in the *Archiv für Laryngologie und Rhinologie*, vol. ii, No. 2, reports having frequently found nerve fibres in œdematous nasal polypi. This he did by means of the methyl-blue staining for nerve tissue.

M. Ripault, in the *Annales des maladies de l'oreille*, etc., for September, 1895, reports a case of Ludwig's angina, the clinical aspect of which differs in no way that I can see from that of any phlegmonous condition that starts beneath a deep fascia. It is evident that Semon's recent declaration that these septic conditions in the neck differ from one another only in degree, either clinically or pathologically, is correct. Fortunately, no one has wearied us as yet by finding a new bacterium. The streptococcus and staphylococcus are present. Dr. Newcomb's recent paper in this journal deals fully with the subject.

In Virchow's *Archiv*, Bd. cxxxix, Heft 1, Dr. A. Küttner writes a very exhaustive paper on Œdema of the Larynx and Submucous Laryngitis. He dwells on the subject of erysipelatous laryngitis to some length, going over rather familiar ground; but there is one remark he lets fall, upon which he says in a footnote that he lays no great stress, which, however, is very interesting to me. Certainly it is one of the most interesting facts in modern medicine that certain micro-organisms have been shown to have a direct ætiological connection with certain diseases, yet these same organisms are constantly found in contact with the human organisms under healthy conditions.

Not forgetting Loeffler's bacillus or the *Staphylococcus aureus*, the *Streptococcus pyogenes*, which is now generally believed to be identical with the *Streptococcus erysipelatos*, is found in the majority of healthy throats.

Küttner says he injected pure cultures of the *Streptococcus pyogenes* under the mucous membrane of the throats of various animals, with no result of consequence. The same cultures injected into rabbits' ears gave erysipelatous phenomena as the result of the treatment. He took pus from a virulent carbuncle in a man's face and injected it into the throats of cats, and produced profound local and general reaction. Now, Dr. Küttner may, as he says in his footnote, "be very far from ascribing any great importance to the negative results with the streptococci," and he may know, as I do not, of similar experiments which resulted differently—*i. e.*, of experiments in which the streptococci from the throat were introduced under the mucous membrane in healthy animals *with* characteristic septic reaction. But we have had enough of the kind of experimenting which injects a Pravaz syringeful of micro-organisms under the mucous membranes or the skin of animals, and adduces from positive results thus obtained conclusions as to the *modus operandi* of ætiological factors in the onset of disease in man. Negative results, however, with such methods certainly possess considerable significance as regards the ætiological influence of a bacterium. In some instances no results have been obtained in man by injections of streptococci in the earlier attempts to cure inoperable malignant disease. These were all under the skin, however. The fact of the streptococcus being always found in the secretions of erysipelatous laryngitis is now of little import, since it is regularly found in all the inflammatory conditions of the throat and is very common in healthy throats.

Küttner also says that Ludwig's disease is simply another manifestation of the same disease as erysipelatous laryngitis. Indeed, as said above, I believe it will sooner or later be found that all these inflammatory processes have a common factor, and that the micro-organisms associated with them are of secondary importance. In the common throat affections they seem to be usually simply incidental. All our recently acquired knowledge in regard to immunity points to this.

Küttner summarizes his conceptions of inflammatory throat affections in the following scheme of "laryngitis submucosa acuta," which he gives as the result of his studies of his own cases and of those reported in literature.

It "includes all those affections in which the submucosa forms the chosen site for tissue changes depending upon inflammatory processes. These may be:

"1. Of an acute infectious nature, and are then to be regarded as acute infectious diseases in which the infective virus has selected the larynx as its port of entry into the organism (primary disease). On the other hand, the larynx may be attacked by the infecting virus also in the course of already existing infective disease (erysipelas, scarlatina, typhoid, etc.), and these complicating conditions should then be placed, so far as they concern the submucosa, in this category (secondary disease).

"According to the pathologico-anatomical condition we have to distinguish:

"(*a*) Œdematous stage—laryngeal erysipelas.

"(*b*) Plastic stage,
"(*c*) Suppurative stage, } acute infectious phlegmon.

"2. Of a non-infectious nature. As ætiological factors there are to be noted burns, foreign bodies, factures and lacerations, taking cold, certain drugs (?), inflammatory processes in the vicinity of the larynx, and constitutional diseases (syphilis and tuberculosis).

"According to the pathological anatomical condition we distinguish as before:

"(*a*) An œdematous stage.

"(*b*) A plastic stage.

"(*c*) A suppurative stage."

Ferreri and Garbini (*Archiv. ital. di otologia, rinologia e laringologia*, July, 1895) have published a very interesting paper on some of the reports of hypertrophy of the palatal tonsils. They give a very good *résumé* of the pathology and report bacteriological examinations in eight cases. In all these cases they found active pyogenic staphylococci and streptococci.

They explain their inoffensiveness in the tonsils under ordinary conditions by supposing that the epithelium or the activity of the lymph cells are sufficient when undis-

turbed to protect the general organism from invasion. They furthermore say, however:

"An operation, like taking cold, disturbs the series of these defensive acts—produces, that is, an inhibitory effect on the amygdalic reaction, by which micro-organisms may penetrate from the crypts into the blood and infect the organism."

Now, in the vast majority of surgical operations there is clinically no evidence that they do anything of the sort. Sepsis after amygdalotomy is almost unknown. I have seen one case of it in which a tonsil was very unwisely amputated during a subacute purulent amygdalitis. No disinfection is ever used for the mouth or throat before operation, and rarely anything after it, in my own clinics, and I do not believe it is the usual custom in the practice of other clinics or with other laryngologists.

Their statement that "it is not prudent to proceed to the abscission of the tonsils without previously, for a week, disinfecting the mouth and nasopharynx" can only be called a fantastical remark, which one is surprised to see under the heading of a name like Ferreri's. Even did clinical experience prove that it is a desirable precaution, it is entirely impracticable to disinfect the mouth and throat, if we mean by that to remove all or even a considerable portion of its pathogenic microbes. In the technique which the authors describe as having used in their bacteriological experiments they say that the tonsils were cut out with sterilized instruments, put into a solution of bichloride (1 to 1,000) for five minutes, in order to get rid of surface contaminations, and then small pieces were cut from the centre of these and used to inoculate rabbits and guinea-pigs and gelatin and agar tubes. Positive results were always attained. Now, if these gentlemen by this procedure do not kill the germs which the tonsils contain, how are they going to disinfect them in the throat? The case of Dr. Caillé, cited by the authors, in which the patient contracted diphtheria after amygdalotomy, is interesting, and would be an important argument if it did not stand almost alone in literature, or if it had many parallels in the experience of the majority of laryngologists. They also quote Jacobi's recommendation that amygdalotomies should not be done during epidemics of diphtheria. This is excellent advice, but in New York city diphtheria is endemic. It is epidemic only in the New York daily papers.

The authors prefer abscission with the knife to ignipuncture, and so do we all; but when they give, as one reason, that ignipuncture does not destroy all the micro-organisms, but simply opens up new avenues of infection, we fail to see how the knife does otherwise.

In glancing over the analysis of laryngological literature in the *Annales des maladies de l'oreille*, etc., for April, 1895, one who takes life and the medical profession too seriously would be bewildered by the conflicting trend of two consecutive abstracts. One is the abstract of Dr. Caillé's communication, referred to above, and the other immediately following it is from a paper by Dr. William Watson in the *Glasgow Medical Journal*. He is quoted as saying there:

"1. Eighty per cent. of the children contract diphtheria on account of the bad condition of their teeth.

"2. Their tonsils are enlarged.

"3. They have had croup.

"These different propositions are the statement of facts which form a chain of consequences."

So far as quoted, Dr. Caillé and Dr. Watson seem to agree, but the latter widely differs with the former when he recommends the ablation of tonsils in cases of beginning tonsillar diphtheria, and alleges good results from the practice. Most of us, however, would shrink from carrying out Dr. Watson's suggestion.

It would be very interesting to know whether the individuals who in health have the Loeffler bacillus in their mouths have an immunity against diphtheria, or whether they are just as likely to contract it as those who do not have the bacillus in their throats or more likely.

Brindel (*Revue de laryngologie*, etc., No. 6, March 15, 1895) has published a very complete paper on herpes of the larynx, with a report of three cases, in which he says there are on record nineteen cases altogether, certainly a surprisingly small number. One is reminded of what Lennox Browne said in regard to lupus of the throat—that in one afternoon spent in a skin hospital he had seen more cases than in twenty years of throat practice; and the same may be true of herpes. In reviewing the ætiology, Brindel remarks that "taking cold is the only cause, occasionally well proved in herpes of the larynx, as in herpetic fever generally." His conclusions are as follows:

"1. There is reason to devote, in special treatises, a new chapter to a malady little known as yet and called herpes of the larynx.

"This affection, which is not so rare as one might suppose, is only one of the localizations, isolated or associated with herpetic fever.

"3. Its most frequent situation is upon the posterior face of the epiglottis and in the vicinity of the arytænoids.

"4. It is characterized anatomically by the evolution in these regions of herpetic vesicles surrounded by an inflammatory zone, and clinically by symptoms common to herpetic fever on the one hand, and on the other by dysphagia, by hoarseness, a little dyspnœa—symptoms which may all be present at once, and which are in relation with the localization of the herpes.

"5. The invasion is sudden, the progress rapid, the prognosis benign, recovery complete, although recurrence is possible.

"6. Only very rarely is herpes of the larynx accompanied by phenomena analogous to those of croup."

Secretan, in the *Annales des maladies de l'oreille*, August, 1895, also publishes an interesting paper on the same subject, with a report of cases. I have myself recently had a case in which there was a single vesicle on the posterior surface of the epiglottis, with the constitutional and local symptoms, but without vesicles elsewhere, in which I am at a loss for any other diagnosis.

There is much more discrepancy in the observations of American and European laryngologists in regard to the ætiology and treatment of laryngeal affections, especially inflammatory, than in nasal disease. This has repeatedly attracted attention, and as an instance of it I translate the

conclusions at which M. Molinié arrives in a paper reported at length in the *Revue de laryngologie*, etc., No. 13, 1895, p. 585:

"1. Laryngitis sicca may be primary and be developed independently of any lesion of the nose and nasal pharynx.

"2. It seems that it should be considered as an attenuated form of tracheal ozæna.

"3. It is probably of a parasitic nature and caused by the coccus of Loewenberg.

"4. This coccus should not be considered as the exclusive factor in ozænal fœtor. For this result there is necessary the concurrence of other undetermined circumstances."

One occasionally sees articles in the American journals treating of laryngitis sicca as an affection independent of nasal disease, but so far as my observation goes our better-known American laryngologists are not inclined to agree to this, in the vast majority of the cases at least.

Personally, I have no recollection of having ever seen a case of real chronic laryngitis, a laryngitis with structural changes, which was not accompanied by disease higher up in the air passages. The exceptions to this observation lie in those cases of habitual and excessive alcoholism, overuse of the voice, and possibly in rare cases of rheumatic origin. In the latter cases, however, the lesion seems to be one rather of congestion with scanty glandular secretion, and occasionally an arthritis of the crico-arytæ noid joint, than of structural change in the mucosa. As for tracheal ozæna, I have seen a good many cases, but never without ozæna and atrophy of the nasal mucosa. Indeed, I am not convinced that there is much change in the mucous membrane of the larynx in these cases, and I believe the statements correct which assert that the crusts are the dried secretions which, in their semifluid state, have come down from above. I believe this, not from microscopical evidence, which, unfortunately, I have had no opportunity of obtaining, but from clinical experience to the effect that treatment successfully directed to cleansing the nose results in the disappearance of the tracheal crusts without tracheal treatment.

As for the coccus of Loewenberg, in the three or four cases of nasal ozæna I have examined bacteriologically I have not been able to identify it, and others who have worked in the same field have had a similar experience.

In a very interesting paper published in the *Revue de laryngologie*, etc., No. 14, p. 625, Dr. Bonain reports the case of a mucous polyp of the nose which, after many recurrences, ended by giving place to a vast encephaloid sarcoma. The patient was thirteen years old and the mucous polyp clinically had a typical appearance. It is well to observe here that a mucous polyp in the nose at thirteen is one of the curiosities of rhinology. Sarcoma at that age is more common. Moreover, it was attached to the anterior end of the inferior turbinate, a still rarer occurrence for an ordinary mucous polyp. A microscopic examination was not made until toward the fatal termination of the case. The growth was called a myxosarcoma. The author then proceeds to discuss the question of degeneration of mucous polypi into sarcomata. There is little excuse, however, in this case for raising the question of degeneration. Even the clinical history goes to show that it must have been in all probability œdematous tissue from an inflammatory process which doubtless was set up by the growth of sarcomatous elements deep in the tissue. After repeated removals of the œdematous superficial tissue the real disease finally declared itself clinically by the typical picture of a nasal sarcoma. The lesson to be learned from this report is this:

If this case had occurred in a patient past twenty-five or thirty, and the seat of the disease had been in the region of the middle turbinate, even had there been a microscopic diagnosis of an ordinary œdematous polypus, there is no human possibility of denying or affirming that the case was malignant from the start. The base from which it grew—the deeper layers of the mucous membrane—not included in the pedicle of the surface polypus, can not be examined microscopically during life, because no one would submit to such a radical operation for what is apparently a simple polypus as would allow the operator to cut out the mucous membrane down to the periosteum. In case of such a radical operation at that early stage we, moreover, would have a justifiable hope of freedom from recurrence even if it were sarcoma. There is no way of settling this question satisfactorily by citing cases. It is a better knowledge of pathological law that we need, and this is not in sight at present.

In the *Monatschrift für Ohrenheilkunde*, etc., April, 1895, Dr. Noltenius, of Bremen, reports thirty-seven cases of clear serous fluid in the antrum of Highmore. Incidentally he remarks that he has treated a hundred and fifty-six cases of empyema of the antrum. The symptoms of this serous disease of the antrum seem to be those of nasal catarrh. So far as can be judged from his report, he was in the habit of puncturing the wall of the antrum *ad libitum* in patients who had, and in patients who did not have, any other intranasal lesion. He says frankly that in many cases he found nothing. He does not report any harm from this proceeding, and in all his cases his patients were cured of all their symptoms by simply washing out the cavity. Such experience is certainly extraordinary. In fact, for my own part, I am astonished at the enormous number of cases of accessory-sinus disease that are reported, especially abroad.

Chiari (*Annales des maladies de l'oreille*, etc., October, 1895, p. 361) has seen over a hundred cases of antrum suppuration. In less than two years he has treated forty cases. It would be very interesting to know how many cases of antrum disease our own laryngologists see in a year. For my own part, I have never seen certainly more than five or six cases of antrum suppuration in any one year. Out of seven hundred new cases of nose and throat disease seen at one of my clinics during the last year we have only been able to find one case. Suppurative ethmoid disease is more common in my experience.

It is commonly said that empyema of the accessory nasal sinuses does not occur in infancy, because they are incompletely developed. M. Rudaux, in the *Annales des*

maladies de l'oreille, etc., for September, 1895, however, reports a case of empyema of the antrum due to the presence of a prematurely developed tooth in an infant of three weeks. A tooth was found hanging by a ligamentous union to the alveolar border of the upper jaw on that side, and after the antrum was opened another, a little molar, was found attached to its floor.

Seifert (*Revue de laryngologie*, etc., No. 21, 1895), in reporting a case of a tooth in the nose, refers to other cases in children where teeth were found in the antrum.

It is of absorbing interest to carefully watch the literature of the serum treatment of diphtheria. In England Lennox Browne, in America Dr. Winters, in Germany Hansemann have declared their belief not only in the inefficiency, but in the frequent harmfulness of the treatment. With these exceptions, the almost universal testimony tends to show that the mortality has been reduced about fifty per cent. The striking exception to this detailed experience comes, however, from Vienna, where the very great majority of observers either condemn its use or speak of it with faint praise. A glance through the June, July, August, and September numbers of the *Centralblatt für Laryngologie* for 1895 will give a good bird's-eye view of the situation.

In a paper published in this journal, September 21, 1895, I quoted from the *Lancet* an abstract of Dieulafoy's recent paper on latent tuberculosis of the tonsils. His full paper has since appeared in the *Archives de laryngologie* of July and August, 1895. He put pieces of tonsils and adenoids from apparently non-tuberculous children in the peritoneal cavities of guinea-pigs, with the result that out of sixty-one cases of palatal tonsils he got guinea-pig tuberculosis in eight, and out of thirty-five cases of adenoids seven tuberculous results—*i. e.*, one in nine and one in five, respectively. So far as I see, he does not definitely state whether we must regard the lymphoid hypertrophy as a tuberculous process or not, but he certainly seems to intimate that such is his view. He seems also to think that the enlarged cervical glands which are so frequently found in these cases are always tuberculous. He also states emphatically that lymphoid hypertrophy is more frequently found in patients with tuberculous heredity. Neither clinical nor microscopical nor literary experience permits me to believe any of these things; but I am willing to believe that tubercle bacilli may exist in these proportions in the crypts and crevices of the tonsils and adenoids. I surmise that, were it possible to find bacilli whenever they were present, the proportion would be found to be much higher. They have been repeatedly found, even by staining alone, in healthy noses and throats. So far as my clinical impressions go, I am disposed to think that phthisical patients do not give the usual proportion of histories of previous lymphoid hypertrophies. On the other hand, I believe that much more than one half of the children in this climate, between the ages of three and ten years, have recognizable lymphoid enlargements in the pharynx. I have frequently found it in the nasopharynx of the still-born infant.

Trifiletti, in the *Archivii italiani di laringologia*, etc., July, 1895, reports some experiments on dogs in regard to the action of the recurrent laryngeal nerve. Some of his experiments were made on non-anæsthetized animals, with electric currents of variable intensities and of slow rhythm. These yielded the following results:

1. On stimulation of the uncut nerve and of its central portion, although there is tendency to approximation of the vocal cords, more than all, there is separation of the vocal cords from the median line of the glottis, especially of the one corresponding to the stimulated side (abduction), such movements being accompanied by reflex disturbances of respiration in the form of forced inspiration followed by instantaneous and noisy expiration.

2. On stimulation of the peripheral end, however, there is prevailing tonic contraction of the cords in the position of adduction.

His other conclusions do not differ materially from those drawn by others whose works are well known to laryngologists.

We might remark that the forced inspiration and sudden noisy expiration mentioned above might be caused by the very natural inclination of the suffering animal to howl under embarassing laryngeal conditions.

In the last one of these papers, published March 16, 1894, in this journal, I translated Onodi's conclusion in regard to the cerebral centre for vocal laryngeal movements. His investigations seemed to point to its lower limit in the corpora quadrigemina.

In the *Lancet* for May 4, 1895, Dr. Ransom reports a case of tumor of the corpora quadrigemina with necropsy. There appears to have been no laryngoscopic examination made, but there were no laryngeal symptoms reported (inferentially none present), except that he had one "peculiar attack." He suddenly called out that his head was bad, and the nurse then found him with retracted head, very pale, unable to speak, though he pointed to his throat. He did not lose consciousness, and the attack passed away in ten minutes. The posterior half of the left optic thalamus and the posterior quadrigemina, especially the left, were involved in the disease, but the anterior quadrigemina were almost obliterated. As this is the exact region mentioned by Onodi as the lower limit of the region of vocal impulses in dogs, the report of this case, though somewhat unsatisfactory, rather tends to refute his statements as applied to man, for there seems to have been no permanent or marked impairment of speech.

Now comes to hand the work of Klemperer in Fraenkel's *Archiv*, Bd. ii, Heft 3, in which this statement of Onodi's is refuted experimentally. Klemperer, moreover, shows by experimentation that in the dog neither acute nor chronic disease of the cortical laryngeal centre, either unilateral or bilateral, results in laryngeal paralysis. He experimented by producing suppuration and tubercle in the laryngeal centre of the cerebral cortex.

He furthermore very aptly remarks that we have no conclusive evidence in man of any cortical cerebral laryngeal centre.

Garel's hitherto unsupported case has now its counterpart in the case reported by Dr. G. Hunter McKenzie in

the *Journal of Laryngology* for April, 1895. He reports a case of laryngeal paralysis in a man suffering from multiple tumors of the brain. The centres at the base of the brain were declared to be healthy, and the observer is inclined to think that the laryngeal paralysis was due to a cortical lesion and distinctly calls in question the applicability of Semon and Horsley's experiments on animals to man. It will be remembered that Garel's case also showed, according to the observer, no lesions of the centres in the medulla. It must, however, be admitted that in this case of McKenzie's the situation of the causative cerebral lesion is a matter of great doubt, since there were a number of tumors in various parts of the brain, besides a lesion of the pulmonary apex on the affected side. Doubtless Dr. Semon will take up his formidable cudgels again.

This subject of laryngeal innervation as it has been discussed in the journals is interesting, but not on account of the instruction that one derives from reading its literature.

DIGITALIS POISONING IN CHILDREN.

By HENRY KOPLIK, M. D.

There are some children who are peculiarly susceptible to the effects of a dose of any preparation of digitalis. There is no drug of greater utility in the realm of pædiatric therapy, yet not one more abused, than digitalis. Physicians seem to forget that the most gratifying effects are obtained from small doses of digitalis rather than the larger quantities. There are children, however, who react in a peculiar way. Some preparations of digitalis have absolutely no effect on these children in small doses, yet when the larger dose is given, or a substitution made, as, for example, the powder replaced by the fluid extract, we have striking digitalis effects shown by the action of the heart. Our administration of the drug must be suspended. These children should never receive digitalis in any form. The drug is a direct cardiac poison to these subjects. The writer has had occasion to verify this, but will describe the effects in the cases of two children in one of which cases there was every reason to believe that the administration of the drug was intelligent; that is, the dose administered and causing the digitalis effects had been preceded by a tentative smaller dose.

Case I.—A boy, aged three years, under treatment in my hospital service for scarlatinal nephritis. The child had not responded to the infusion of digitalis (U. S. P.) made from the leaves. The infusion made from the fluid extract of equivalent strength was substituted for the leaves after several unsuccessful attempts to increase diuresis with the ordinary infusion.

After the dose had been carefully increased, the child, whose pulse had been 118 to 112, suddenly began to exhibit the following peculiar pulse record:

	Pulse.	Respiration.	Temperature.
July 21: 3 P. M.	112	36	99·2°
6 "	118	36	99·6
9 "	100	30	99·0
July 22: 1 A. M.	110	32	99·6°
4 "	104	30	99·2
6 "	100	32	99·0
9 "	92	28	98·6
2 P. M.	76	26	98·6
5 "	64	26	98·0
6 "	88	..	....
8 "	106	..	....
9 "	54	26	97·8
11 "	72	..	97·4

It will be seen that in this case the great variations in the pulse were also accompanied by a distinct drop in the number of respirations and also in the temperature, which is a rectal one. The temperature dropped fully two degrees in twenty-four hours. In this case there was no immediate appreciable increase in the amount of urine; in fact, toward 5 P. M., July 22d, the urine became distinctly less in quantity, and necessitated other crude means subsequently, when the child had recovered from the digitalis effect. With these symptoms the use of digitalis was suspended and remedies to be mentioned hereafter were administered. The child made an excellent recovery from its nephritis without further doses of digitalis.

Case II.—This case I saw in consultation, and if it is studied I think it will be conceded that the initial dose (two drops of the fluid extract) was rather large, as the result showed.

A girl, aged six years, was suffering from an acute bronchopneumonia in the middle lobe of the left lung. Through a prescription error of the physician in charge the child had received as an initial dose two drops of the fluid extract of digitalis four times daily, instead of two drops of the tincture.

On the fourth day of the illness, the pulse being 150 and somewhat irregular, two drops of the fluid extract of digitalis were administered every three hours.

Pulse, fifth day, 130 and more regular.

Pulse, sixth day, 120, regular.

Pulse, seventh day, A. M., 112, regular; P. M., 60, very irregular.

Pulse would show six or seven beats fairly regular, and then a pause and ten to twelve beats very irregular, then a beat or two and a pause. Use of digitalis discontinued.

Eighth day, A. M., 80, irregular and almost imperceptible at wrist; 12 M., 46; P. M., 60, irregular and markedly dicrotic.

The physician records the heart sounds tumultuous and the diastole prolonged.

Ninth day, pulse still dicrotic; had reached 100 morning and evening.

Tenth day, pulse 120 and regular.

This was a case of pneumonia, and in these cases we must consider digitalis as one of our most useful drugs. But it must be administered in exceedingly moderate doses, and then only in the form of the tincture—a mild preparation as compared with the fluid extract.

In this case the heart was irregular, beating 150 to start with, and under digitalis became regular, and then was not only irregular but actually at times tumultuous in its action. A constant feeling of nausea and also occasional vomiting were permanent symptoms; the pulse was irregular and dicrotic to the touch, showing a reduction rather in tension. It was irregular, 60 to 80 beats, when the digitalis effects began to wear off under treatment.

In this paper the writer desires to adhere strictly to clinical narrative and not enter into pharmacological ground; yet it will be noticed in Case II that, though digitalis was administered for three days in quite liberal doses, the heart continued regular and was reduced to what appeared its normal action, and only on the evening of the third day of its administration did the heart become irregular and markedly reduced in action.

After the third day the use of digitalis was discontinued by the attending physician, whose suspicions had become aroused, and in spite of this fact the heart did not return to the normal in its action, even with the aid of remedies, for fully three days, when we find a record of 120 beats, which were regular.

In Case I we find also the administration of digitalis to have had no effect until on a change of preparation the effects were shown suddenly and markedly without previous warning. The heart also took fully two days, after a suspension of the use of digitalis, to return to its normal condition.

These facts in these two cases of the sudden appearance of untoward cardiac phenomena, and their persistence for days even after the digitalis was withdrawn, seem to the writer almost incontrovertible evidence of the persisting effects of digitalis on the heart, such as is seen in the action of no other drug. The sudden onset of symptoms where none had been present for fully three days in Case II, and the substitution of the very irregular for the regular cardiac action, are strong arguments in favor of the effect on the heart corresponding much to what experimental pharmacologists call "cumulative," but which many deny as specific to digitalis. In fact, no less an authority than Horatio C. Wood, in his address before the Tenth International Medical Congress upon anæsthesia, says, speaking of digitalis and its action on the heart already compromised by chloroform: "The influence of injections of digitalis has been, in a number of experiments, very pronounced in producing a *persistent* gradual rise of arterial pressure with an increase in the size of the individual pulse rate. In several instances death was apparently averted by its injection, and I saw in one or two cases where large amounts of digitalis had been employed sudden systolic cardiac arrest, indicating that digitalis in sufficient amount is able to victoriously assert itself in opposition to chloroform. . . . I believe that in all cases of weak heart in man a full dose of digitalis before the administration of chloroform would greatly lessen the danger of cardiac collapse."

We have thus in the foregoing evidence of direct belief in a sustained action of the drug digitalis on the heart and its ganglia, and in our cases we have also clinical evidence of a regulating action of digitalis on the heart up to a certain point, beyond which irregularity and weakness result with lowered instead of high arterial tension. The reason for this action it seems might be sought in an overstimulation of the cardiac ganglia, which, responsive at first, are subsequently paralyzed by digitalis. The return to the normal takes several days in spite of remedial measures.

Treatment.—I have studied the treatment of these cases of digitalis poisoning and am convinced that most efficacious has been the immediate removal of the drug, with absolute rest in bed. It is very difficult in the face of a very tumultuous and irregular heart to stand by and do nothing, so in Case I I used strychnine. In Case II the only efficient remedy seemed to be rectal injections of black coffee. Vomiting and constant nausea being present, the administration of champagne, caffeine, or sparteine by the stomach was not practicable. Both patients made a good recovery, and in future I should rely principally on perfect rest and subcutaneous injections of strychnine, and in aggravated cases rectal injections of coffee.

66 East Fifty-eighth Street.

PROSTATECTOMY.*

By SAMUEL ALEXANDER, M. D.,
SURGEON TO BELLEVUE HOSPITAL;
PROFESSOR OF GENITO-URINARY SURGERY AND SYPHILIS
IN THE BELLEVUE HOSPITAL MEDICAL COLLEGE.

In May, 1894, in a communication read before the American Association of Genito-urinary Surgeons at the Washington Congress, I reported two cases of prostatectomy in which I had removed the adeno-myomatous growths causing obstruction to micturition by a new method, which consisted in making both suprapubic and perineal openings and enucleating the prostate through the latter. The opening in the bladder above the pubes was simply for the purpose of pressing down the prostate by the finger so that it could be reached from the perinæum. By this operation the mucous membrane of the bladder and that of the prostatic urethra remain uninjured. My first operation was performed in January, 1894.

In April, 1894, Dr. Nicholl, of Glasgow, described an operation of prostatectomy by the combined method of incisions and removing the prostate through the perinæum, which differs from my operation in that Dr. Nicholl does not open the urethra, but drains the bladder subsequently by the suprapubic opening, while I open the membranous urethra and drain by way of the perinæum.

The operation which I have described has proved so satisfactory with me that I desire to present to the society two cases of prostatic hypertrophy in which the prostate was removed by this method. These cases were both unfavorable ones for operation, but they show, I think, what good results may be obtained in advanced prostatic disease, even in unfavorable cases, by prostatectomy, and also the efficacy of the method of removing the prostate which I have heretofore advocated. As the steps of the operation have never been fully published, I may briefly describe them.

The patient is prepared, when possible, by giving a cathartic the night before the operation, and by emptying the lower bowel by a large enema the following morning.

The bladder is washed immediately before the operation with a solution of nitrate of silver (1 to 6,000).

The patient being anæsthetized, the bladder is emptied

---

* Read before the Society of Alumni of Bellevue Hospital, December 4, 1895.

by catheter, and is then distended with Thiersch's solution, ten ounces being sufficient in most cases to bring the bladder well above the pubes. I have entirely discarded the use of a rectal bag.

The bladder is then exposed by a vertical incision between the recti muscles, and two retraction sutures are introduced through its wall. Between these an opening is made into the bladder large enough to allow the operator to insert two fingers.

The cavity of the bladder and the projecting portions of the prostate are now examined.

The suprapubic opening is then covered with gauze, and the patient placed in the lithotomy posture. A staff is passed into the bladder through the urethra and held by an assistant. The membranous urethra is then opened by a median perineal section, the floor of the urethra being thoroughly cut from just behind the bulb back to the apex of the prostate. This must be done thoroughly.

The staff is then withdrawn and the gauze removed from the suprapubic wound.

The surgeon now washes and disinfects his hands.

Two fingers of the left hand are then passed into the bladder through the suprapubic wound, and by these the prostate is pressed downward into the perinæum.

With the forefinger of the right hand the surgeon begins the enucleation, which is performed entirely through the perineal opening.

The outer sheath of the prostate is broken into by the finger just beneath the mucous membrane of the prostatic urethra, and the entire prostate is shelled out from within its sheath by digital dissection. The mucous membrane of the bladder and prostatic urethra with the underlying muscular tunic is stripped up, but is not opened.

The right and left lobes are first removed, after which, if there is a middle projecting tumor, this can be pressed downward into the perineal wound and enucleated in the same manner. During the enucleation the prostate is to be drawn down into the perinæum by forceps.

After the removal of all the prostatic growths the wound is flushed with 1-to-5,000 bichloride solution, a perineal tube is inserted into the bladder, and a rubber drainage-tube of moderate size is placed in the bladder above the pubes. The upper part of the suprapubic wound is then closed by sutures.

The after-treatment consists in daily washings of the bladder, fluid being injected into the suprapubic tube. All urine flows out of the perineal tube.

The upper tube is removed on the sixth day, and the lower tube three days later, after which the bladder is washed by catheter through the perinæum for a few days.

A full-sized sound is passed at the end of the second week, and then every five days until the perineal opening closes. The wounds have usually healed in the course of five weeks.

The advantages of this method are, I believe—

1. Great diminution in the hæmorrhage.

2. The mucous membrane of the bladder and prostatic urethra is kept intact, thus avoiding the danger of septic absorption.

3. The best possible drainage of the bladder is obtained.

The two cases which I now present I have selected because the patients have been under observation for a number of months and show the permanent effect of the operation. They are not the best of the cases, but are examples of the results of this operation in unfavorable cases:

Case I.—T. O'C., aged sixty years; native of Ireland; single; no history of venereal disease. Ten years ago he had a sudden attack of retention, which was relieved by catheterism; he was admitted to one of the city hospitals, and was there taught to use a catheter, which he continued to use for several years. He, however, gave up its use owing to his reduced circumstances, after which he continued to pass his water with great frequency.

Three months ago he had a second attack of retention; this was also relieved by catheter. He was admitted to my service at Bellevue on February 11, 1895, with retention for the third time and considerable vesical distention and overflow. Catheterized, and thirty-two ounces of residual urine drawn. Bladder showed marked atony. Rectal examination shows an enlargement of the prostate, the right and median portions being affected. The catheterism is not difficult when a Mercier instrument is used. A soft catheter can not be introduced.

He was catheterized four times daily and the bladder washed once a day until March 17th.

At the end of this time the patient could pass about half an ounce of urine voluntarily, there being about ten ounces of residual urine. It was found impossible to teach him to use a catheter and wash his bladder, and, as he had no facilities for performing this for himself out of the hospital, an operation was offered and accepted.

Operation March 18th. Ether anæsthesia. Combined operation; Alexander's method employed. A large right lobe and smaller median portion were removed through the perineal opening after enucleation without much difficulty. Bleeding slight.

March 25th.—Suprapubic tube removed.

April 3d.—Perineal tube removed. No. 32 sound passed. Suprapubic opening nearly closed. No urine escapes.

24th.—Perineal wound closed. Urine passed by urethra; two ounces of residual urine due to atony. He now passes water every four or five hours, and empties his bladder almost completely. There are now seven drachms of residual urine.

Case II.—James D., aged sixty-two years; weight, two hundred and thirty-five pounds. Admitted March 26, 1895.

Patient came in with a history of difficulty in passing water and great frequency of several years' duration, with a condition of acute retention of urine of twelve hours' duration.

Catheterism was attempted by the house surgeon, but he was unable to pass any instrument into the bladder.

After some difficulty I succeeded in passing a No. 6 E. styleted catheter, bent to an exaggerated curve, the stylet being withdrawn gradually as the catheter was introduced so as to cause its point to override the obstruction presented by the middle portion of the prostate. Thirty-three ounces of ammoniacal bloody urine were withdrawn. Rectal examination showed an enormous prostatic tumor encroaching upon the cavity of the bowel, the upper margin of which was well above the reach of the finger. The patient's bladder was washed and a catheter was passed by the above-described

method every six hours. The urine continued to be fœtid and to contain blood.

On April 11th the house surgeon again failed to make the instrument enter the bladder, and I succeeded only after a prolonged trial. I decided to open the urethra through the perinæum as a preliminary operation to prostatectomy for the purpose of draining the bladder and disinfecting its cavity. I therefore, under ether anæsthesia, performed a perineal section and attempted to dilate with my finger the prostatic urethra. I could not, however, pass my finger into the bladder, owing to the length of the prostatic portion of the urethra and the very great resistance offered by the prostatic growths.

Accordingly I simply introduced through the perinæum into the bladder a No. 26 F. tube, and, having washed the bladder, secured this in place by tapes.

This drainage I continued for a week; the loss of blood ceased, the urine became clearer, and the patient's condition improved. At the end of the week the perineal tube was taken out, and I then found no great difficulty in introducing through the urethra a Mercier catheter. Knowing, however, from the size of the prostate, that this improved condition would be only temporary, I decided to remove the prostate, which I did by the combined operation (Alexander's method) on April 11, 1895, in the presence of Dr. Bangs and Dr. Van der Poel and with the assistance of Dr. George Stewart and the house staff. The operation, owing to the depth of the perinæum, was difficult to perform.

I succeeded, however, in removing the entire enlargement —two large lateral lobes and two large median tumors—without injury to the bladder or prostatic urethra.

The tubes were removed on the tenth and sixteenth days respectively. The wounds healed slowly, but both were entirely healed at the end of the fifth week.

The patient at first had almost complete incontinence, but has now control over his sphincter, and empties his bladder completely.

THE DIAGNOSIS OF MALIGNANT TUMORS OF THE LUNGS.*

By I. ADLER, M. D.,

PROFESSOR OF CLINICAL PATHOLOGY AT THE NEW YORK POLYCLINIC; VISITING PHYSICIAN TO THE GERMAN HOSPITAL.

Since Stokes's classical researches, a very extensive literature has accumulated on the malignant tumors of the lungs and pleura, and these neoplasms have been the subject of very detailed investigations, both from a clinical and from a histological point of view. Notwithstanding this mass of accumulated detail, the current medical textbooks pass over this particular chapter in a very cursory and frequently rather superficial and for the needs of the practitioner entirely insufficient manner. It is not surprising, therefore, that in the minds of many practitioners malignant tumors of the lung are considered more as extremely rare curiosities than as lesions whose recognition may at any time be required at their hands. Even if, therefore, I am not in a position to contribute anything essentially novel to this theme, it may still not be unwelcome to submit the subject of the diagnosis of malignant tumors of the lung and pleura to your consideration this evening. We limit ourselves to the discussion of malignant tumors, inasmuch as the benign growths hardly ever become the subject of clinical diagnostics. Lipomata, chondromata, osteomata, etc., it is true, have been repeatedly observed and described as occurring in the lungs. Chiari has found adenoma and its combination with other forms of tumor in bronchiectatic cavities. Nevertheless, these tumors, of great interest and importance to the pathologist and histologist, are, as a rule, merely casual observations at autopsies, and lack all clinical interest. They are usually small and insignificant growths that cause in no wise characteristic or important symptoms during life.

The case is quite different with malignant tumors. These lead to very important and serious disturbances and become objects of great clinical interest, and a severe test of the diagnostic acumen of the physician. We limit our discussion to the primary growths. In most cases where cancerous tumor has with certainty been recognized in some other organ, it will probably not be difficult to appreciate dubious or unusual complications on the part of the lungs as metastatic deposits. In those instances, however, in which the primary tumor is obscure and removed by localization, lack of symptoms, etc., from the possibility of diagnosis, the secondary deposits which may appear in the lungs or pleura are subject to the same diagnostic principles which must be applied to the recognition of primary growths in these organs. On the other hand, it is necessary to consider the primary growths of the pleura together with those of the lung. Neoplasms of the pleura have been observed, indeed, which affected the pulmonary tissue but in a very subordinate degree or not at all, while tumors have been reported which were confined almost exclusively to the lung. In the large majority of cases, however, both lung and pleura are conjointly affected to a greater or lesser extent, and not infrequently both tissues are so thoroughly and uniformly invaded by the cancerous degeneration that even the microscopical examination is unable to decide whether lung or pleura is the seat of the primary lesion. The same holds good for the clinical aspect in these lesions. In some instances the pleuritic symptoms predominate, in others, the manifestations of pulmonary disease; in very many, however, the symptoms, pulmonary as well as pleuritic, are so intimately associated that a separate consideration of each group becomes well-nigh impossible.

The minute anatomy of the neoplasms of the lung and pleura has been the subject of much close and careful investigation. Nevertheless there still exists considerable confusion in terminology as well as in fundamental conceptions, and numerous problems, especially as to the origin and development of this class of tumor, are yet unsolved. The older publications are well-nigh useless for the study of these questions, and many even of the more recent observations, owing to incomplete microscopical analysis and insufficient description of detail, lose much of their value. It is not sufficient merely to state, as is done so often, "the microscope shows cancer," or "the tumor was a sarcoma," etc. It is necessary to give in every case as detailed a description as possible of all the component parts and their arrangement, the probable point

* Read before the Society of Physicians of the German Hospital and Dispensary, December 16, 1895.

of origin, etc., so as to enable the student to judge for himself, not only of the validity of the anatomical diagnosis, but also of the value of this particular observation, as confirming or confuting other similar observations and the theories based upon them. Only in this way can we hope ultimately to clear up the numerous obscurities which still envelop this particular chapter of pathology. It is unnecessary for our purpose to enter into minute anatomical detail; let me present to you merely a few leading facts, requisite for a general view of the subject. The tumors that come under consideration are: carcinoma, sarcoma, endothelioma, and combinations of these groups. Of carcinoma there occur cylindrical-celled, pavement-celled, and also medullary and scirrhous forms. The cancers that originate from the mucous membrane of the bronchi are mostly composed of typical cylindrical cells. In rare cases (Ehrich) true pavement-cell epithelioma has been observed. In some instances the epithelium of the alveoli has been the starting point for cylindrical-cell carcinoma as well as for pavement-cell carcinoma (Grünwald, Fuchs, Wolf). Friedländer describes a true cancroid which developed from the wall of a tubercular cavity and proliferated as a loose and floating mass into the bronchus without in any way involving the bronchial walls. To my mind it is questionable whether much that is reported as carcinoma should not rather be classed under the head of endothelioma. This is one of the fundamental questions at present still unsettled, and which I can not enter upon here. Sarcoma is represented principally by the softer encephaloid forms, though harder forms, containing abundant fibroplastic tissue, do occur.

Endothelioma is particularly well studied in the pleura, and the researches of Wagner, Schulz, Neelsen, and many others have established the more or less diffuse primary endothelioma of the pleura as a well-marked, sharply defined type of disease both clinically and anatomically. By no means so well studied is the endothelioma of the lung, and there is here as yet considerable diversity of opinion.

In regard to the gross anatomical conditions several attempts at classification have been made, but, owing to the numerous transitions and combinations that constantly occur between the so-called types, the classifications do not appear very satisfactory. In a general way it may be said that two leading types of distribution occur: the diffuse, more uniform infiltration, and the more or less sharply defined nodular forms of growths. The latter form again may be represented by one bulky mass of tumor, or the neoplasm may be disseminated in the form of several, sometimes numerous, foci of varying size. The metastatic deposits rather incline to the latter mode of distribution. The diffuse infiltrations usually take their origin from a primary focus in the walls of one of the larger bronchi, and, proliferating thence into the peribronchial and perivascular lymph spaces, they follow the track of the bronchial ramifications over extensive areas and in all directions. In a similar manner the diffuse endothelioma of the pleura represents a rather uniform and vigorous proliferation of the endothelium in many if not in all of its lymphatics. The nodular form of malignant growths may, under certain conditions, develop into masses of considerable size, so that the greater portion of one or more pulmonary lobes can be involved. In such tumors the pulmonary tissue is frequently so entirely replaced by the neoplasm that not even the microscope can detect any trace of the original structure. In such large tumors the point of origin can rarely be determined with any certainty. In nearly every case of this kind the pleura is also more or less deeply involved, and it is impossible to make out whether lung or pleura is the seat of primary development. A distinct tendency to degeneration and softening appears to be a characteristic of these more massive forms of cancerous growths.

With regard to the age at which malignant tumors of the lungs occur, it may be said that carcinoma of the lungs forms no exception to the general rule, according to which the middle and later years of life are particularly favored. Sarcoma seems to develop in the earlier periods of life as well, and has even been observed in very young children. Probably the youngest patient is on record in the oft-quoted observation of MacAldowie: death from primary pulmonary tumor in an infant five months and a half old. Unfortunately, there being no microscopic examination reported, it is impossible to determine whether the tumor was sarcoma or carcinoma. Statistics as to the frequency of this class of tumors are limited. Wolf finds among 20,116 autopsies in Dresden, covering the time from 1852–'94, primary pulmonary carcinoma forty-five times, which corresponds to a proportion of, roughly, about two in one thousand. A smaller percentage has been obtained by Fuchs from the autopsies in Munich: eight cases among 12,307 autopsies, equal to 0·065 per cent. These figures refer only to carcinoma. If we consider, in addition, the cases of primary sarcoma and endothelioma, which, to say the least, are not more rare than carcinoma, we may not be wrong in assuming, though it is not possible to adduce figures, that primary pleuro-pulmonary tumors are not such extremely rare occurrences as is commonly supposed.

In addressing ourselves now to the proper subject of this paper it is necessary to note that, under certain conditions, the diagnosis of tumor of the lung as such is hardly possible. Very frequently the earlier stages of the disease are accompanied by no very prominent symptoms, so that at the time when the patient first begins to complain and seeks medical advice, physical examination already shows advanced lesions. But not merely the earlier stages may thus remain for a time latent; it appears that even the entire course of the malady may be accompanied by symptoms so slight and so indefinite in character that the attention neither of the patient nor of the medical attendant is directed toward the lungs as the seat of disturbance. Chiari describes a case which illustrates this. At the autopsy of a woman of about seventy years, who had died after operation for incarcerated crural hernia, a primary cylindrical carcinoma of the bronchi was discovered that had caused numerous secondary deposits in various organs, and which had evidently not caused any pronounced clinical symptoms. Again, it may happen that, together with very grave general disturbances, the local signs are so slight or so little characteristic, and can be so completely accounted

for by other lesions (cardiac complications, for instance), that the diagnosis becomes extremely difficult or impossible. Ebstein reports such a case.

Lastly, it may happen that some other well-defined and typical disease so completely predominates in the clinical picture that the tumor which complicates it is necessarily and completely removed from all possibility of recognition. This latter condition obtains when malignant neoplasm and tuberculosis of the lungs are associated in the same subject. The opinion of the older authorities, according to which cancer and tuberculosis exclude each other, as it were, and do not occur together in the same subject, is no longer tenable. It is now a matter of frequent experience that carcinoma finds in tubercular tissue conditions favorable for its development. As a well-known example of this fact may be cited the development of epithelioma on lupus. In the lungs also carcinoma has been repeatedly observed associated with or developing from tuberculosis. Instances of this are: The case of Friedländer mentioned above; the oft-quoted case of Puech, in which, besides these tubercular cavities in the apex of the right lung, there was a primary carcinoma of the trachea and right bronchus; quite recently a number of cases published by Wolf. Now, all the symptoms which can be utilized for a diagnosis of pulmonary neoplasm may also, singly or in manifold combinations, occur in pulmonary tuberculosis. In such cases, especially if there is an abundant crop of bacilli in the sputum, it will hardly be possible to recognize the tumor besides the tuberculosis. All those signs by which Stokes, Woillez, and others have endeavored to differentiate between pulmonary tuberculosis and neoplasm have proved unreliable.

In considering now the diagnostic means at our disposal in those cases where diagnosis is possible and which, after all, are in the majority, it is necessary to reiterate again what has often been urged by others: There is only *one* sign which by itself alone and with absolute certainty establishes the diagnosis of neoplasm. This is the demonstration of the tumor elements in their typical arrangement by the microscope. This demonstration may be rendered possible in various ways. In two cases, one reported by Hampeln, the other by Huber, considerable masses of tumor were expectorated, and the direct microscopical examination of sections of these at once assured the diagnosis of sarcoma. Undoubtedly, however, such occurrences as these are extremely rare. Among the large number of cases reported I have been able to find only the two just referred to where a tumor mass was bodily expectorated. In another case reported by Hampeln, that author based the diagnosis of carcinoma of the lungs upon the observation of numerous large polymorphous, club-shaped and fusiform cells in the sputum, and the autopsy verified the diagnosis. Very recently Betschart has published a similar case. We can not, however, be too cautious in pronouncing upon the character of cells occurring in sputum, if the cells are not aggregated in the typical arrangement peculiar to tumors. It is assuredly most difficult to select out of the vast number of cells, both normal and pathological, which occur in the sputa, certain forms as tumor cells, and this procedure appears permissible only when all clinical and physical symptoms point in the direction of neoplasm. In such cases the demonstration of suspicious cells found more or less constantly in the expectoration may be received as a valuable bit of circumstantial evidence. As a case in point, that of Betschart, just mentioned, does not at all seem established beyond possible doubt, and even the autopsy does not appear to me to have absolutely settled the correctness of the diagnosis of carcinoma. But be that as it may, the appearance of what might be alleged to be tumor cells in the sputum is rare enough. In the overwhelming majority of cases on record the sputa have, so far as cellular elements are concerned, afforded absolutely negative—that is to say, in no way characteristic—results. Krönig succeeded in one instance in removing from the lung by means of the exploring needle a small particle of tissue in which the microscope revealed elastic fibres and lymphosarcoma, thereby enabling him to make a direct diagnosis. Prentiss reports a similar case. Again, it has frequently been attempted, and several times with success, to diagnosticate neoplasms of pleura and lung by the demonstration of tumor elements in pleuritic effusions. In such exudates large, polymorphous cells have been discovered that may contain numerous vacuoles, sometimes several nuclei, mitoses, regular and irregular, pluripolar, etc. Quincke and others, recently Rieder, have published such cases. It may not always be quite easy to determine whether such cells are genuine tumor elements or whether they are endothelia, proliferating and degenerating under the influence of inflammatory, tubercular, or other morbid conditions. Nevertheless these questions merit further careful investigation. It is possible that valuable aids to the diagnosis of pleuropulmonary and abdominal tumors may be derived from the microscopic study of pleural and peritoneal exudations. In like manner that form of effusion which Quincke designates as hydrops adiposus may become of diagnostic value. Quincke has shown that when very rapid proliferation and fatty degeneration of cells take place, as is the case in pleural or peritoneal carcinoma, the exudate may become highly charged with fatty elements. These exudates deposit on standing a more or less voluminous layer of adipose substances which can be extracted with ether, crystallized, determined quantitatively, etc. It is asserted that these fatty exudates never occur when there are purely inflammatory conditions; they may be found, however, in tubercular effusions. Whether sarcoma can produce them as well as carcinoma is not yet established. I have no personal experience on the subject.

It will be seen from this that those cases in which the microscope affords us the means of a direct diagnosis are extremely rare. In the great majority of cases the direct microscopic diagnosis is impossible, and we must endeavor to arrive at a diagnosis by indirect means—by a careful combination and balancing of manifold, varying, and often dubious symptoms.

Permit me to report to you briefly some cases which have come under my own observation and which may be considered as fairly representative of certain types of the lesions under discussion:

The first case is that of a lady, about sixty-six years old, of extremely nervous temperament, and with the signs of a moderate general arterio-sclerosis. Her previous history offers nothing of importance. No hereditary taint can be established. In the early part of the summer of 1890 the patient first began to be troubled. She complained then of an irritating cough and a difficulty in breathing on even moderate exertion. The cough was short and dry, without pain and without expectoration, and was preceded by a tickling sensation in the upper air-passages. The cough was as troublesome when the patient remained in bed as it was during speaking or moving about. Careful examination failed to reveal any lesion, with the exception of a slight chronic pharyngitis. In the course of the next few weeks the subjective symptoms increased. Considerable general debility became noticeable, together with psychic depression, loss of appetite, and shortness of breath on the slightest exertion. Repeated and most searching examinations revealed nothing tangible. A stay of several weeks in the country in no wise improved the patient's condition. On the contrary, the general debility increased rapidly and pronounced attacks of dyspnœa set in. There was no fever. About the beginning of August, on her return from the country, a very slight dullness on percussion could be made out. The dullness was located on the left side posteriorly, about the level of the sixth rib, between the border of the scapula and the spine. Within this area the respiratory murmur was slightly diminished, but what particularly claimed attention was a distinct, though not very loud, hissing, stridulous respiratory sound, which was audible on deep inspiration and expiration over a limited space within the area of the dull percussion note and not far from the spine.

These signs, slight in themselves, were nevertheless highly significant. They pointed conclusively toward the obstruction of a large bronchus in the region of the hilum of the left lung. The rapidly advancing marasmus, the absence of fever, the slow and insidious progress of the malady, the absence of all symptoms, physical and otherwise, on the part of all the other organs, rendered the assumption highly probable that the obstruction was caused by a primary carcinoma of a bronchus. This assumption was fortified by the subsequent progress of the case. Slowly but steadily the area of dullness extended over the entire lower posterior lobe and at the same time increased in intensity, although the percussion note at no time became entirely flat. The respiratory murmur over this area became more and more diminished, with a slight bronchial admixture. The bronchial stridors, at first increased in intensity, later on gradually diminished, and finally disappeared altogether. Over the other parts of the lungs, both right and left, numerous loud, mostly dry, râles became audible, and with the paroxysms of coughing thick, viscous mucus was expectorated. At no time was the sputum tinged with blood. The microscopical examination of the expectorations never revealed anything characteristic. The patient at no time complained of any pain. The general debility increased rapidly, and she was no longer able to leave her bed. The paroxysms of dyspnœa became more frequent and more severe, and occasionally, particularly after violent attacks of cough, culminated in intense orthopnœa.

About this time also occasional slight febrile temperatures of irregular type were noted. In the early days of October a very moderate but distinct icterus appeared, which slowly increased to a certain extent during the next weeks. The liver became larger, and a number of uneven, somewhat hard, nodules could be recognized near the lower margin of its left lobe. In the meantime the area of dull percussion had invaded the posterior lower portion of the upper lobe of the left lung. The patient was now mostly somnolent and quite apathetic, and death from exhaustion took place about the middle of November, not much more than five months from the time the first subjective symptoms were noted. An autopsy was not permitted. Notwithstanding the lack of anatomical corroboration the assumption of primary bronchial cancer appears not only perfectly assured in this case, but, moreover, the only diagnosis that could possibly be entertained. The initial conditions of bronchial irritation without apparent lesion, the consequent symptoms of bronchostenosis in a strictly limited area, the dull percussion developing from this area and slowly spreading over a wide tract of pulmonary tissue, the diminished respiratory resonance accompanying this dull percussion note, the rapidly increasing general cachexia, apparently out of all proportion to the relatively insignificant physical signs, the metastatic deposits that toward the last appeared in the liver, and lastly the practically normal condition of all the other organs—all these data imperatively suggest this sole conclusion.

(*To be concluded.*)

A CASE OF
SYMPATHETIC OPHTHALMITIS,
*WITH PRACTICAL DEDUCTIONS.**

By LOUIS W. FLANDERS, M. D.,
DOVER, N. H.

I have chosen for my subject this morning sympathetic ophthalmitis. I was influenced in my choice by a desire to bring before you something that would interest you as general practitioners, and also by a feeling that I could speak more intelligently upon this subject than upon some topic of general medicine. In order to bring the subject before you in a practical way, I beg to cite the following case:

Mr. E. S., aged forty-four years, a native of Yorkshire, England, was brought by his physician to my office upon February 4, 1895. The patient stated that three weeks before, while unloosing a cow from the stall, she had turned suddenly, striking him in the left eye with the tip of her horn.

Status Præsens.—V. = P. l. and f. Eye very much inflamed, with large black ecchymosis below the cornea. A partially healed rupture of the conjunctiva and sclera about ten millimetres in extent, situated at the upper and inner side of the cornea. The iris torn and retroflected toward the wound, leaving a coloboma nearly ten millimetres wide. No signs of the lens. Probably delivered through the wound at the time of injury, as the attending physician states that there has been no cataract. Eyeball tender, marked photophobia, and persistent pain. The right eye quiet, with no tenderness of the ciliary body, V. = $\frac{6}{5\,0}$ S. — 1·00 D. ⌒ C. — 1·50 D. axis 180 V. = $\frac{6}{1\,0}$. Advised enucleation, but, inasmuch as the patient could see a little with the injured member, he refused to have it done.

February 28th.—Patient appeared with his physician on account of trouble with the right eye. That organ showed marked ciliary congestion with slight turbidity of the aqueous. The instillation of atropine revealed the presence of four posterior synechiæ. No pain. Evidently a case of sympathetic ophthalmitis. The left eye was not so much in-

* Read before the Strafford District, N. H., Medical Society at its eighty-eighth annual meeting.

flamed as at the first visit, but the sight was almost nil. After careful consideration I decided that enucleation would give him a little more chance and so informed him. He obstinately refused to have the operation performed at the time, but on the morning following telephoned his consent. After assuring myself that there was no chance for sight in the injured member, I enucleated after Bonnet's method. Upon section of the eyeball I found the iris retroflected and adherent to the ciliary body to the extent of about ten millimetres, the lens absent, the vitreous disorganized, but no detachment of the retina. For the sympathizing eye I ordered a solution of atropine, four grains to the ounce, to be instilled three times daily, confinement in a darkened room, and moderate doses of quinine.

March 2d.—Pupil open wider, ciliary congestion less marked.

6th.—Adhesions broken and pupil round. Aqueous clear and some black dots on the anterior capsule of the lens aside from points of adhesion of synechiæ.

15th.—Spots of opacity disappearing, media clear, fundus normal.

April 25th.—R. V., $= \frac{6}{5}$ S. — 1·00 D. ⌒ C. — 1·50 D. axis 180, V. $= \frac{6}{10}$. Reads test type No. 1 (Jaeger) with cylinder only.

October 5th.—Saw the patient this day and his eye was perfectly quiet, with same vision as above stated.

Injuries of the eye, as a rule, first come into the hands of the family physician. If he be far removed from a specialist, the treatment of the case through its various phases falls on him alone. To enucleate or not to enucleate is a question which many times vexes both the specialist and the general practitioner alike, and its decision oftentimes calls forth our most careful consideration and mature judgment. If we decide in favor of the operation, the patient, perhaps, refuses, takes his chances, the eye quiets down with partial sight remaining, and we have a permanent advertising agent who goes about among his friends boasting of his superior judgment, and declaring that "if Dr. Jones had had his way he would have had that eye out of my head." On the other hand, if we temporize and treat the case "expectantly," sympathetic ophthalmitis sets in, resulting in blindness for the patient, and a suit for malpractice ensues.

In deciding this difficult question, I think we must, as a rule, discard all statements of the patient himself. We must remember that he does not appreciate the dangers of sympathetic inflammation as we do, and that he will shrink from operation, and retain his eye if possible. To this end he will exaggerate the amount of sight in the injured organ; he will minimize the amount of pain he suffers; he will carefully conceal all symptoms of irritation in the sound eye. He will withhold his consent to operate until some serious trouble begins on the uninjured side, and then, with blindness staring him in the face, he will finally yield.

Right here comes a point that is not understood by the laity, and upon which I have found physicians themselves were often cloudy—namely, that when sympathetic ophthalmitis has appeared it is usually too late to operate and often inadvisable. There is a vast difference between sympathetic irritation and sympathetic inflammation. Sympathetic irritation is characterized by blurring of near vision, photophobia, and, above all, by a tenderness of the ciliary body in a part or the whole of its extent, which can be brought out by pressure with the point of a probe even through the closed lids. These symptoms are not to be disregarded, but are not necessarily fatal, as they often disappear spontaneously in a day or two. Sympathetic inflammation usually shows itself as a serous iritis, as in the case cited above, or as an irido-cyclitis, often accompanied with keratitis punctata, while oftentimes the optic nerve, the retina, and chorioid are involved. Those cases which appear as a serous iritis give the most hope for recovery, but when complicated with cyclitis they are almost certain to go on to plastic exudation, to contraction of the vitreous, to detachment of the retina, and, in short, to the condition known as phthisis bulbi. If, then, we remove the exciting eye, we may by so doing deprive the patient of the only chance of sight he has; for it may in time quiet down, with partial sight remaining, while the sympathizing eye is pretty sure to go on to absolute blindness. You will note in the case at the opening of this paper, I did not enucleate until I was positive that the sight of the injured member was irrecoverably lost.

The most generally accepted theory to-day as to the cause of the disease under consideration is that of infection. The investigations of Deutschmann and others seem to show that the optic nerves and chiasm furnish a direct path for the passage of micro-organisms from one eye to the other; and my reason for operating in the case just cited was to cut off the depot of supplies and prevent further infection.

We may learn a lesson from this case with regard to the mode of attack and the period of incubation in this disease. Mark how insidiously it came on. There was no pain, no blurring of sight. The symptom that called the patient's attention to it was "redness" of the eye, and this did not appear until the inflammation had been going on long enough to cause the iris to become adherent in four places. Then, too, it was six weeks from the time of injury before the trouble began in the well eye. The violence of the inflammation had abated, the pain had disappeared, but it was evident that the work of infection had been going on for some time. From three to six weeks is the period at which sympathetic inflammation most frequently manifests itself, but it may be delayed for years. A patient came to me recently to be cured of "a cold" in his eye. There was ciliary congestion and marked tenderness in the organ, and upon the opposite side a blind stump, the sight of which had been destroyed by an accident years ago. When I recommended its removal he threw up his hands in disgust and said:

"You are the third specialist who has recommended that in the last twenty years. I have these times every once in a while, and a little eyewater always cures them." That man was suffering from sympathetic irritation, and he may awake some day to the realization that the last "time" has come.

It is necessary in these cases to have some rules for our guidance in rendering a decision, and the following are pretty generally accepted by the profession to-day.

We are to enucleate:

1. In irido-cyclitis, with a foreign body in the eye which can not be extracted by the ordinary measures. This I put first, because sympathetic ophthalmitis is almost sure to follow, and we must enucleate even though the sight be fairly good.

2. In cases of severe injury with hopeless destruction of sight, where an irido-cyclitis almost amounts to a certainty.

3. In idiopathic irido-cyclitis with complete loss of sight and great tenderness of the eyeball.

4. In a sightless and shrunken bulb, no matter of how long standing, where there are periodical attacks of tenderness and inflammation in the sound eye.

We must not enucleate when sympathetic inflammation has set in, if the sight of the exciting eye be fairly good. This for reasons already stated in this paper.

In all cases where it is possible we should render our opinions in the presence of a third person. In the case above, I caused the family physician to make a note of the advice given, that I might have a reliable witness in the event of a suit for malpractice. If enucleation is performed, we must not forget that infection may have occurred even before an early operation. This is especially important, because most patients give a reluctant consent, expecting that the operation will be a sure protection against sympathetic inflammation. This is not the case, however, and the patient should be so informed. After having carefully formed our opinion according to the rules laid down, we should never hesitate to assert ourselves positively. It is better to suffer the imputation of being mercenary or unqualified in the minds of a few, than to have a blind man groping about the streets as a lasting monument of our indecision.

A RAPID AND RATIONAL METHOD FOR THE REMOVAL OF HYPERTROPHIES OF THE INFERIOR TURBINATED BODIES.

By J. E. HETT, M. B.,
BERLIN, ONTARIO.

Various methods are used at present for the reduction or removal of hypertrophies of the turbinated bodies, namely:

Astringent medicines, which are applied by douches.

Atomizers, elegant spray devices, etc., which are gradually falling into disuse.

Various caustics, chemical and thermal, and the galvano-cautery. Of the former, chromic acid takes the lead.

The galvano-cautery and snare have been the best means so far for the removal of these tissues. I have used them considerably with excellent results, but I have met with some cases in which I have been baffled. These adversities led me to adopt a more rational form of treatment.

Chromic acid is indeed an excellent caustic, but the objection I have to it is that it causes very great crust formation, which does not occur so frequently after the galvano-cautery. In large hypertrophies, it must be applied very freely in order to obtain the desired results, and will of necessity cause considerable discomfort to our patients. Treatment by the galvano cautery is exceedingly good, for by it the turbinated tissue is readily burned to the bone, and by a series of treatments the enlargements are removed, having caused very little suffering to the patient. Many cases, however, occur which do not run so smoothly, for many specialists must have been annoyed by posterior hypertrophies which they do not see and for which they are very often to blame.

It is exceedingly difficult to cauterize posterior hypertrophies. Sometimes the cautery snare will do good work, but often it will fail.

I wish to state here that many specialists are the cause of producing posterior hypertrophies in some cases, and it is done in this manner. Hypertrophic rhinitis is treated in the usual manner with the galvano-cautery. We cauterize all the hypertrophied tissue we can see, and when we have cauterized it sufficiently, as it seems to us, we expect that the case is cured. But the patient comes back and tells us that his nose is still blocked up. We examine it under cocaine and we can not see anything wrong.

We give him another treatment or some alkaline wash, and after some weeks or months he presents himself again with the same story. We examine again, and still we see nothing that could cause his discomfort, for the cauterized areas look perfectly well. After some months we see him again, and still he has the same story, and now he may remain in this condition. Now what we have caused is this: By repeated cauterizations the turbinated tissue is thrown into folds by means of scar tissue, and we destroy the submucous tissue near the posterior portion of the turbinated bone, which interferes with the circulation of the blood in the tissue below the scar. It becomes congested, and, as the blood can not readily pass upward, that portion of membrane, if not already enlarged, must of necessity become enlarged, and gradually well-developed hypertrophies are the result.

Now let me call attention to the fact that this hypertrophy is difficult to see and to determine the size of unless we are familiar with the process. In the first place, a very bright light is essential; with a poor light we work in the dark and can not see it.

It is situated at the posterior angle of the inferior turbinated bone; from there it extends downward, forming a large, rounded hypertrophy. If the parts are thoroughly under cocaine and a fine probe is passed beneath the turbinated bone and then brought inward around the borders, we perceive that it lifts the mass upward and inward, and now we are able to see it clearly and to judge of its size.

Having located it, I find that it can be removed with the cautery or hot snare, but this is very tedious and often unsatisfactory. This being the case, I resolved upon a more rational method of operation. The best and the most rational method is to take a long angular scissors, pass the lower blade along the lower border of the inferior turbinated bone to the free border, and then cut off the overhanging tissue. Now remove the scissors and take a long angular forceps and remove the tissue that has been sev-

ered. If not completely cut off, no harm is done by giving gentle traction and tearing it off. Much force should, however, not be used, or we will remove more tissue than we want. If not completely severed, it is better to introduce the scissors again and give it another cut. Hæmorrhage will follow, and this is very similar to cases of removal of exostosis and deviated sæptum. It may bleed considerably, but if the following rules are adopted afterward there will be little trouble:

After the operation and the patient's nose has been thoroughly washed out, he should not allow his head to hang down or blow his nose—that is, on the side which has been operated upon—until the following morning. He may walk about, etc., the same as after other operations in the nose attended by hæmorrhage. At night, on retiring, he should have a number of pillows under his head, and should lie on the side opposite to that which has been operated upon so as to bring that part uppermost. That rule I advise in all cases of nasal hæmorrhage, no matter from what cause, and it has always been effectual, as I have never been obliged to plug the cavities.

The method of removing posterior hypertrophies in this manner has given me most gratifying results. It is the most rapid and most rational of any method, and I resolved to treat all forms of inferior hypertrophies in this manner and have obtained the same good results in all cases. It has given me such excellent results that I use the cautery very little.

The disadvantages of the method are:

1. The hæmorrhage; but if the above simple rules are followed we have very little trouble.

2. It does not look so mild as the cautery, though in reality it is less painful, and sensitive patients will object to this treatment more than to the cautery.

The advantages are:

1. It requires only a few treatments. In one treatment as much can be accomplished as in half a dozen to a dozen other treatments, thereby saving much time. In the majority of cases one treatment on each side is all that is necessary.

2. It is less painful than any other method. Patients on whom I have used both methods prefer the cutting.

3. The thoroughness with which the tissues are removed.

4. It causes very little scar tissue and in reality a small wound.

5. Heals more rapidly.

6. The tissue, when healed, will not resemble a tissue all puckered up and riddled with cicatrices, but will resemble more the normal tissue.

7. It is the most rational method, for if we had similar enlarged tissue occurring at any of the orifices of the body or skin, we would not cauterize it and treat it, but would simply take a pair of scissors and cut it off. In the nose the same rule holds good.

The University of Michigan.—It is announced that Dr. Eliza M. Mosher, of Brooklyn, has been appointed professor of hygiene.

A RATIONAL TREATMENT OF SEASICKNESS,

WITH A WORD AS TO PROPHYLAXIS.

By SINCLAIR TOUSEY, A. M., M. D.,
SURGEON IN CHIEF, ST. BARTHOLOMEW'S CLINIC;
LECTURER ON CLINICAL SURGERY,
NEW YORK POST-GRADUATE MEDICAL COLLEGE;
ASSISTANT SURGEON, ROOSEVELT HOSPITAL, OUT PATIENT DEPARTMENT.

The treatment formulated below is based upon a consideration of the supposed causes of seasickness and of the possibility of acting directly upon them. The treatment itself proved of remarkable benefit in the case of a member of my own family on my recent vacation trip to Europe.

As to the causes of seasickness, I suppose it is only in the minority of cases due to succussion or shaking about of the contents of the stomach and consequent mechanical irritation. In these few cases the treatment which I suggest is manifestly appropriate. In most cases the irritation is probably a reflex from the visual apparatus or from the semicircular canals of the internal ear. The functions of both of these are correlated in the faculty of equilibrium, and the functions of both are greatly overwrought under the conditions of incessant and violent motion which produce seasickness.

The treatment which I have employed with perfect success is the administration, every half hour, of two teaspoonfuls of a preparation of peptone in sherry wine. This is cooled by pouring it upon cracked ice. It is not necessary to advertise any particular preparation, as two different ones proved equally efficacious upon different occasions. The patient was a young lady who was extremely susceptible to seasickness, and had become so on railroad trains and Sound steamers. She began to assume almost a typhoid look before she cared to try to take anything. The same day that she began this treatment she was able to sit up on deck and called for a chop. On the return trip she wanted the "medicine" as soon as she was sure she was going to be sick. It had an equally prompt effect. On each occasion there was no vomiting or nausea after the second dose, and the recovery of complete strength and appetite was very prompt. In her case seasickness was certainly not due to succussion of the stomach contents, for on each occasion she tried total abstinence as a prophylactic.

My theory, then, is that the proper treatment consists in the frequent administration of small quantities of highly nutritious, predigested, and slightly stimulant food at a temperature which will produce a local sedative effect upon the stomach. The use of cocaine and other local sedative drugs is to be deprecated as unnecessary, and, unless combined with the above-mentioned means, ineffective. The use of bromides in large and repeated doses begun before the voyage, as suggested in a paper read by Dr. A. D. Rockwell at a recent meeting of the New York County Medical Society, I suppose must be for the purpose of inhibiting the activity or sensitiveness of the vomiting centre in the medulla. This would seem to be less easy and less desirable than to control the same centre by sedative treatment of

its nerve-endings in the stomach; and it is open to a fatal objection, illustrated by a case which I have now under observation. The patient is a young lady who was moderately seasick and was given bromides in large doses by the ship's surgeon. She was very promptly attacked with a bromide rash in the form of acne and broad, thickened red plaques upon the face. This condition has now continued with only slight abatement for over six months. It is hardly likely that any of her acquaintances will ever take bromides for seasickness.

The treatment of a very large number of cases of vomiting after ether anæsthesia has convinced me of the efficacy of a direct sedative action upon the stomach even when the cause is an irritation of the central nervous system.

A word as to prophylaxis. A patient of mine sailed on the same steamer with me. He had always been seasick even upon sailboats in New York Bay. For a week before and during the entire time on the ship he took two or three laxative pills daily, and was the picture of health every moment of the time.

29 West Thirty-eighth Street.

FOREIGN BODIES IN THE RECTUM.

By EMIL ARONSON, M. D.,
Dallas, Texas.

A few weeks ago a peculiar case of foreign bodies in the rectum came under my observation.

On December 7, 1895, Mr. S. came to my office complaining about some bowel trouble. He stated that he had not had any movement of the bowels since November 28th (Thanksgiving day), except the passage of some blood and mucus. He had not vomited and did not have any pains in the stomach. Placing him upon the office chair, I examined the abdomen without finding anything positive. Upon examining the perinæum I felt some hard substance; the patient complained of some pain. An examination of the rectum revealed the presence of something which reminded me of bone. Upon closely questioning the patient—a rather unintelligent man—he acknowledged that he had enjoyed his Thanksgiving turkey to such an extent that he had swallowed the bones of the turkey's neck. This made the diagnosis of the *corpus* or rather *corpora delicti* under my finger clear, and it was an easy matter to "deliver" the patient of eight neck bones, although I had to be careful not to cause any fissures of the mucosa, the sharp edges of the bones sometimes sticking in. One of the bones was so high up that I found it impossible to reach it with either finger or forceps, but I gave him a rectal douche with the desired result. The patient left my office in a happier mood and feeling much better.

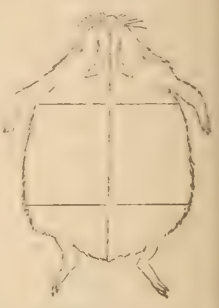
It is remarkable that these *corpora aliena* with their sharp or rough edges should have passed through the whole digestive tract without causing any inflammation or other complication.

The Obstetrical Section of the New York Academy of Medicine.—Dr. W. R. Pryor has been elected chairman and Dr. S. Marx, secretary.

A READY METHOD OF APPLYING DR. ABEL'S DEVICE FOR RECORDING GUINEA-PIGS.

By A. P. OHLMACHER, M. D.,
Cleveland, Ohio.

Bacteriologists who are accustomed to handling considerable numbers of guinea-pigs in their experimental work will readily appreciate the value of the ingenious method of recording the animals experimented upon recently proposed by Dr. Rudolph Abel (*Centralblatt für Bakteriologie*, Bd. xviii, No. 22, 1895). The author proposes to identify the pigs by recording the markings of the animals on an outline representing two hemisections of a guinea-pig spread out from the median dorsal line as a hinge. For the benefit of those who may not have access to the article in question I here reproduce Dr. Abel's drawing reduced to one third the original size.



The markings of the animal can be recorded on this outline with appropriately colored pencils, or, as the author suggests, we may represent white as unmarked, yellow by simple straight lines, brown by crossed straight lines, black by waving lines, and gray by crossed waving lines. Along with the markings of a pig, its sex, weight, and any other desirable data can be indicated about the diagram.

For the purpose of easily obtaining this diagram along with the notes, Dr. Abel has had a rubber stamp made which can be procured in Greifswald, Germany.

Wishing to put these suggestions into practice without going to the trouble and delay of importing a stamp from Germany, or of having one made, I availed myself of the suggestion made by my wife of obtaining mimeographic copies of the diagram. A sheet of stencil paper was placed over the drawing and the outline lightly traced with a blunt lead pencil. The stencil paper was then transferred to the corrugated steel plate of the mimeograph, the outline retraced with the steel stylus, and the divisional lines put in place. From this sheet a series of pictures were printed on several dozen note slips, the whole operation being completed in half an hour's time.

This plan can best be applied when one uses that most excellent method of recording laboratory observations first recommended by Professor Wilder, of Cornell University (see *Anatomical Technology*, Wilder and Gage, 1882, pp. 45–52)—the slip system of taking notes. My notes are all made on slips five inches and a half by eight inches and a half in size. Slips of this size are particularly well adapted to the purpose in hand as a full-sized guinea-pig outline can be printed on a sheet, leaving considerable room for additional notes.

Bacteriological Laboratory, Medical Department, University of Wooster.

The Jefferson Medical College.—We learn from Philadelphia that the special course of lectures before the students by Dr. Fenton B. Turck, of Chicago, which began early this week, is, as we should have expected, highly appreciated.

A CATARACTOUS FAMILY.

By JOHN L. DICKEY, A.M., M.D.,
WHEELING, WEST VIRGINIA.

Under this title I reported in the *Pittsburgh Medical Review*, about three years ago, the fact of a mother and three daughters having cataract, and of my having operated on two of the daughters. Recently I operated on the third daughter. It is seldom one would have the opportunity of doing four cataract operations on three sisters, and it is certainly rare for so many cases of cataract to occur in one family.

The mother had soft cataract and was successfully operated on by Dr. S. P. Hullihen, of Wheeling, about forty years ago, when she was about forty years old.

On November 6, 1884, I removed a hard cataract from the left eye of one of the daughters, aged thirty-eight. I used cocaine for an anæsthetic. It was the first time, so far as I know, that cocaine was used in cataract extraction. On February 5, 1885, I operated on the right eye of the same patient. The result was perfect, vision of $\frac{20}{20}$ being attained in either eye with +9 glasses.

On March 9, 1892, I removed a hard cataract from one eye of the second sister, aged forty-seven. The result was perfect, $+ 11 \bigcirc + 1{\cdot}50$ c., ax. 150°, giving $\frac{20}{20}$ for distance, and $+ 16 \bigcirc + 1{\cdot}50$ c., ax. 150°, enabling the patient to read the finest print.

The third sister was blind with capsular cataract twenty years ago and had the left eye needled, with no improvement, by a physician of Wheeling eighteen years ago. She moved to Missouri shortly afterward and has lived there ever since. After going to Missouri she had the right eye operated on, but the eye was entirely lost, so she had been blind for twenty years when she came back here to be operated on recently. On September 14, 1895, I did the modified Graefe operation, with iridectomy, and removed as much as possible of the densely opaque capsule. The result is good, +10 giving $\frac{20}{70}$ for distance, and +16 enabling her to read small pica. She had not forgotten in the least how to read after the twenty years of blindness.

The remaining sister of the family is about fifty-five years old and has perfect vision and strong eyes. Of the two brothers of the family nothing definite could be learned.

Notice to Librarians and to Physicians having Unused Medical Periodicals.—Dr. George M. Gould, of No. 925 Walnut Street, Philadelphia, requests librarians of medical societies, colleges, and associations to send him lists (with precise dates, etc.) of such periodicals as they need to complete their files. He also begs physicians (or legatees) to send him accurate lists of such periodicals (or books) as they are willing to donate to libraries. Lists only are desired, not the periodicals themselves, until after correspondence it shall have been determined: 1. Where they are needed. 2. Where they will be properly cared for. 3. Where they will do the most good to medicine. It is Dr. Gould's intention to aid established libraries in completing their files by thus forming a kind of (free) exchange, and to encourage the formation of new public medical libraries by utilizing some of the vast number of valuable medical publications at present going to waste or destruction.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co. Edited by Frank P. Foster, M.D.

NEW YORK, SATURDAY, FEBRUARY 8, 1896.

MEDICAL EXPERT TESTIMONY.

It is to be presumed that no member of the medical profession doubts the foolishness of the system, or rather the utter lack of system, in vogue hereabouts of providing so-called medical experts as witnesses in courts of law, as well as of the manner of their treatment while they are on the stand and of the niggardliness of their remuneration. Just what it is best to do to remedy this state of things is a matter for consideration. The Medical Society of the State of New York has taken up the question, and we hope its efforts will be productive of good. A year ago it appointed a committee, consisting of Dr. J. B. Ransom, Dr. Carlos F. McDonald, Dr. H. E. Allison, Dr. S. B. Ward, and Dr. E. D. Fisher, to report a plan. At the recent meeting of the society the committee reported that, recognizing the difficulties in the way of formulating a plan that would be both satisfactory and constitutional, they had corresponded extensively with members of the legal and medical professions, and they presented a resolution which they thought represented the best opinions as expressed to them in the light of present constitutional restrictions.

The resolution is as follows: "*Resolved*, That the Medical Society of the State of New York would recommend the enactment of a law by the Legislature providing for the appointment of experts by the courts, and that only physicians of repute in the particular branch of medical science to which the question calling for expert opinion relates shall be appointed; that the function of the experts so appointed shall be advisory, and the number thus appointed shall be such as to adequately represent the court and both sides of the question at issue as in the judgment of the court shall seem necessary; that the experts so appointed shall have full and free access to all the evidence in the case, as well as access to the plaintiff or defendant in person, as the case may be, if the issue involves his mental or physical state; that the expert shall submit to the court, for transmission to the jury, a report in writing setting forth their conclusion and the facts in evidence on which such conclusion is based; that the cross-examination of such experts shall be limited to the facts and opinions embraced in their testimony as embodied in their report; and that their compensation shall be fixed by the court at a rate that is reasonable for professional services of such a nature." The report was adopted and referred to the society's committee on legislation. It will rest with that committee to frame a bill that shall conform to the requirements of the resolution

and at the same time be acceptable to the Legislature. The task, it must be confessed, is not likely to prove an easy one, but we believe the committee will accomplish it, and we wish them success in the effort.

MINOR PARAGRAPHS.

A NEW OBSTETRICAL JOURNAL.

We have received the first number—for January, 1896—of *L'Obstétrique*, the further titles of which are *grossesse, accouchement, suites de couches, hygiène et alimentation du nouveau-né.* It is a bi-monthly of ninety-six large octavo pages very handsomely printed. The editor is Dr. P. Budin, in association with an editorial committee consisting of Dr. C. Maygrier, Dr. Paul Bar, and Dr. E. Bonnaire and Dr. L. Merle as *secrétaire de la rédaction.* The communicated articles, which take up two thirds of the number, are on The Iliofemoral Pelvis, by Dr. P. Budin; Symphysiotomy and Basiotripsy, by Dr. C. Maygrier; The Artificial Digestion of Milk (a Comparative Study of the Action of the Digestive Ferments on the Albuminoids of Crude and of Sterilized Milk), by Dr. C. Michel; Heart Diseases in their Relations with Pregnancy and Labor, by Dr. L. Demelin; Velamentous and Marginal Insertion of the Umbilical Cord in a Case of Placenta Prævia, by Dr. L. Merle; and A New Way of Tying the Umbilical Cord, by Dr. P. Budin. These are followed by twenty pages of abstracts and a carefully prepared index of the current literature of the subjects indicated in the title of the journal. *L'Obstétrique* is published in Paris, and its issue is to be on alternate months to those of *La Gynécologie*, heretofore known as the *Nouvelles archives d'obstétrique et de gynécologie.*

A BATCH OF SUPPOSITORIES THAT "WENT WRONG."

A colleague who lives in Vermont lately prescribed some glycerin suppositories for a gentleman, with the direction "Use as directed." What happened is thus told by the patient in a letter: "I inclose you a sample of a *pill* I have been taking until they nearly killed me. It is a prescription you gave me for the rheumatism last time I was there. I took about ten of these 'what do you call them?' They each waited for the other, and after a big dose of physic congregated and, in a large *ball*, managed to escape."

ITEMS, ETC

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending February 4, 1896:

DISEASES.	Week ending Jan. 28.		Week ending Feb. 4	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	12	2	4	2
Scarlet fever	193	17	130	6
Cerebro-spinal meningitis	0	0	4	1
Measles	436	20	414	29
Diphtheria	270	40	307	48
Small-pox	0	0	0	0
Tuberculosis	155	126	97	122

The Kings County, N. Y., Medical Association.—At the recent annual meeting officers were elected as follows: President, Dr. J. C. Bierwirth; vice-president, Dr. L. A. W. Alleman; recording secretary, Dr. F. C. Raynor; corresponding secretary, Dr J. Scott Wood; treasurer, Dr. E. H. Squibb; member of the executive committee, Dr. Jonathan Wright.

Corrigenda.—The following corrections should be made in the text of Dr. W. Milton Lewis's article on Melæna Neonatorum, which appeared in the *Journal* for February 1st: Page 137, second column, ninth line, for "parotid," read *carotid;* page 139, second column, sixteenth line from the foot, for "shudder," read *sudden.* The following changes should be made in the list of references to literature appended to the article: Under Foster (19th reference), for "Ibid.," etc., read *Chicago Med. Jour. and Exam.*, xxxii, 1875, p. 801; under Gould, for "Ibid.," read *Am. Jour. of the Am. Sci.;* under Minot, F. (57th reference), for "Ibid.," read *Am. Jour. of the Med. Sci.;* under Schallenmüller (77th reference), for "Ibid.," read *Med. Correspondenzbl. d. Würzburg. Aerzte;* under Thornton, J. B. (90th reference), for "Ibid.," read *Boston Med. and Surg. Jour.;* under Welch, W. H. (101st reference), for "Ibid.," read Pepper's *System of Medicine.*

The American Medical Review.—We learn that Dr. Daniel Lewis has retired from the editorial management of the *Review.*

The Society of Medical Jurisprudence.—The special order for the meeting of Monday evening, the 10th inst., is to be a paper entitled The Difference between Medical and Legal Insanity, by Henry Hardwicke, Esq., of the New York bar.

A Physician's Library.—We would call our readers' attention to an advertisement that appears in this issue of the *Journal*, headed "Medical Library for Sale." The library is that of a physician, lately deceased, whose widow desires to return to her former home in a foreign country.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from January 26 to February 1, 1896:*

Hallock, Harry M., First Lieutenant and Assistant Surgeon, is relieved from duty at Fort Bayard, New Mexico, and ordered to Fort Logan, Colorado, at that post.

Munday, Benjamin, Captain and Assistant Surgeon, is granted leave of absence for one month on surgeon's certificate of disability, with permission to apply for an extension.

Ten Eyck, Benjamin L., Captain and Assistant Surgeon, is ordered to Fort Niobrara, Nebraska, for temporary duty.

Wilson, William H., First Lieutenant and Assistant Surgeon, is relieved from duty at Fort Leavenworth, Kansas, and ordered to Fort Bayard, New Mexico, for duty at that post.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the two weeks ending February 1, 1896:*

Siegfried, C. A., Surgeon. Detached from the Texas and ordered to the Columbia.

Farwell, W. G., Surgeon. Detached from the Columbia and placed on waiting orders.

Guthrie, J. A., Passed Assistant Surgeon. Detached from the Texas and ordered to the Katahdin.

De Valin, C. M., Assistant Surgeon. Ordered to the Naval Hospital, Philadelphia.

Farenholt, A., Assistant Surgeon. Detached from the U. S. Steamer Baltimore and ordered to the U. S. Steamer Monterey.

Hawke, J. A., Surgeon. Detached from U. S. Steamer Baltimore and ordered to the U. S. Steamer Philadelphia as fleet surgeon of the Pacific Station.

Hubbard, G. C., Assistant Surgeon. Detached from the U. S. Steamer Vermont and ordered to the U. S. Steamer Cincinnati.

Pusey, A. B., Assistant Surgeon. Detached from the U. S. Steamer Cincinnati and ordered to the U. S. Steamer Vermont.

Simons, M. H., Surgeon. Detached from special duty at Portsmouth, N. H., and ordered to the Torpedo Station.

Steele, J. M., Surgeon. Detached from the Torpedo Station and ordered to special duty on the U. S. Steamer Independence.

Windslow, G. F., Medical Inspector. Detached from the U. S. Steamer Philadelphia and granted leave of absence for three months.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the Thirty-one Days ending January 31, 1896:*

Stoner, G. W., Surgeon. Granted leave of absence for thirty days with pay, and not to exceed sixty days without pay. January 15, 1896.

Pettus, W. J., Passed Assistant Surgeon. Granted leave of absence for thirty days. January 2, 1896.

Magruder, G. M., Passed Assistant Surgeon. Leave of absence extended nine days. January 2, 1896.

Goodwin, H. T., Passed Assistant Surgeon. Granted leave of absence for sixty days. January 4, 1896.

Smith, A. C., Passed Assistant Surgeon. Directed to investigate relative to small-pox in Mississippi and Crittenden Counties in Arkansas. January 14, 1896.

Gardner, C. H., Assistant Surgeon. Ordered to examination for promotion. January 4, 1896. Granted leave of absence for thirty days. January 15, 1896.

Nydegger, J. A., Assistant Surgeon. Ordered to examination for promotion. January 8, 1896.

Wickes, H. W., Assistant Surgeon. To proceed from New Orleans, La., to Memphis, Tenn., for temporary duty. January 14, 1896.

Banks, C. E., Passed Assistant Surgeon. To proceed from Washington, D. C., to Boston, Mass., for temporary duty. January 31, 1896.

Pettus, W. J., Passed Assistant Surgeon. To assume temporary command of service at Norfolk, Va. January 31, 1896.

Guiteras, G. M., Passed Assistant Surgeon. To proceed from Gulf Quarantine to Mobile, Ala., for temporary duty. January 18, 1896. To rejoin station at Gulf Quarantine. January 31, 1896.

Stewart, W. J. S., Assistant Surgeon. Granted leave of absence for ten days. January 27, 1896. Ordered to examination for promotion. January 31, 1896.

Sprague, E. K., Assistant Surgeon. Granted leave of absence for twenty days. January 23, 1896.

Prochazka, Emil, Assistant Surgeon. To proceed from Detroit, Mich., to Chicago, Ill., for temporary duty. January 31, 1896.

Wickes, H. W., Assistant Surgeon. Upon completion of temporary duty at Memphis, Tenn., to return to his station at New Orleans, La. January 17, 1896.

Resignation.

Goodwin, H. T., Passed Assistant Surgeon. Resignation accepted, to take effect March 5, 1896.

Board Convened.

Board convened to meet in New York city for the physical examination of a candidate for appointment in Revenue Cutter Service: Surgeon W. A. Wheeler, chairman, and Assistant Surgeon H. S. Cumming, recorder. January 29, 1896.

Society Meetings for the Coming Week:

Monday, *February 10th:* New York Academy of Medicine (Section in General Surgery); New York Ophthalmological Society (private); New York Medico-historical Society (private—anniversary); New York Academy of Sciences (Section in Chemistry and Technology); Lenox Medical and Surgical Society, New York (private); Society of Medical Jurisprudence, New York; Maine Academy of Medicine (Portland); Boston Society for Medical Improvement; Gynæcological Society of Boston; Microscopical Club of the Buffalo Society of Natural Sciences; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private); Marion County, Fla., Medical Society (Ocala).

Tuesday, *February 11th:* New York Academy of Medicine (Section in Genito-urinary Surgery); New York Medical Union (private); Kings County, N. Y., Medical Association; Medical Society of the County of Rensselaer, N. Y.; Newark (private) and Trenton, N. J., Medical Associations; Clinical Society of the Elizabeth, N. J., General Hospital and Dispensary; Northwestern Medical Society of Philadelphia; Practitioner's Club, Richmond, Ky.

Wednesday, *February 12th:* New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Metropolitan Medical Society, New York (private); Medical Societies of the Counties of Albany and Allegany (quarterly), N. Y.; Philadelphia County Medical Society; Pittsfield, Mass., Medical Association (private); Franklin, Mass., District Medical Society (quarterly—Greenfield).

Thursday, *February 13th:* Society of Medical Jurisprudence and State Medicine, New York; New York Laryngological Society; Brooklyn Pathological Society; Medical Society of the County of Cayuga, N. Y.; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia.

Friday, *February 14th:* Yorkville Medical Association, New York (private); Brooklyn Dermatological and Genito-urinary Society; Medical Society of the Town of Saugerties, N. Y.; German Medical Society of Brooklyn; Cleveland Medical Society.

Saturday, *February 15th:* Clinical Society of the New York Post-graduate Medical School and Hospital.

Answers to Correspondents:

No. 440.—The rules governing the admission of colleges to membership in the American Medical College Association are: 1. That the colleges shall require a graded course of instruction, covering a period of not less than three courses of lectures of six months' duration each, before graduation. 2. That both oral and written examinations be required of all students. 3. That a thorough course of laboratory instruction be maintained in chemistry, histology, and pathology. 4. A preliminary entrance examination, consisting of: *a*, a composition written in English, of not less than two hundred words; *b*, the translation of easy Latin prose (it is provided, however, that students be allowed one year to make up any deficiency in this examination); *c*, an examination in higher arithmetic; *d*, an examination in elementary physics. It is provided, however, that candidates who are graduates or matriculates of recognized colleges of literature, science, and arts, or graduates of normal schools supported by the different States, be exempt from the provisions of this examination.

By resolution it was determined that the colleges entitled to representation in this convention should enforce this curriculum at the beginning of the session of 1892–'93.

Births, Marriages, and Deaths.

Married.

Atwood—Jarvis.—In New York, on Wednesday, February 5th, Dr. Charles Edwin Atwood and Miss Helen Pearce Jarvis.

Morell—Richardson.—In St. James, Minn., on Wednesday, January 29th, Dr. Harry Morell and Miss Euphemia Richardson.

Died.

Barber.—In Brooklyn, on Wednesday, February 5th, Dr. Isaac H. Barber, aged sixty-seven years.

Magoun.—In Grinnell, Iowa, on Thursday, January 30th, Dr. G. F. Magoun.

Rose.—In West Winfield, N. Y., on Monday, February 3d, Dr. James M. Rose, in the eightieth year of his age.

Wieber.—In Brooklyn, on Friday, January 31st, Dr. George Wieber, aged seventy-one years.

Proceedings of Societies.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Ninetieth Annual Meeting, held in Albany, on Tuesday, Wednesday, and Thursday, January 28, 29, and 30, 1896.

The President, Dr. Roswell Park, of Buffalo, in the Chair.

The President's Address.—In his inaugural address the president congratulated the society on the revival of the *Index Medicus*, called attention to the fact that the medical department of the State library contained a valuable collection of volumes at the disposal of the physicians of the State, and expressed the hope that some arrangement could be effected by which this library could be made a traveling one. He also reminded the members that fourteen years had now elapsed since the separation of the society from the American Medical Association, and remarked that, whatever might have been the causes operating at that time to bring about this deplorable state of affairs, they were certainly now much less operative, and he felt sure that the majority of the members would gladly welcome the day when the national association would receive their delegates with the old-time cordiality. He expressed the belief that this time was fast approaching, and that only the prejudices of a comparatively small number of men now stood in the way of its accomplishment.

He expressed it as his firm opinion that the best interests of the society would be served by changing the place of meeting, and suggested that at least the experiment be tried of meeting in the western part of the State. After referring to the Ainsworth bill, the proposed abolition of the coroner system, and certain matters connected with medical education, the president dwelt upon the matter of medical expert testimony, and more particularly of the awkward and unjust position in which the medical profession had been recently placed by a judicial decision on the matter of "privileged communications." It had recently been held that a physician bringing suit for an amount due for professional services rendered could not disclose in court the nature of those services. Another judicial matter deserving of attention and rectification was the bringing of suits for damages against the estates of physicians. The speaker said that he believed that at least nine tenths of the suits brought against medical men were prompted by a desire to levy blackmail, and were utterly without just foundation.

The Prize Essay.—The committee on prize essays reported, through Dr. A. Jacobi, of New York, in favor of awarding the prize to Dr. A. L. Benedict, of Buffalo, for an essay on Stomach Diseases.

The Law for the Prevention of Blindness.—Dr. Lucien Howe, of Buffalo, reported for the committee that one or two prosecutions had been attempted under the law, but without much result. It was recommended that the committee on hygiene be requested to report to the proper legal authorities violations of the law coming under their notice, and to report to their medical societies instances in which the district attorney failed to act promptly; also that the committee on legislation should try to secure the passage of a more definite and effective law than the existing law of 1891. Dr. Howe added that in a recent personal and thorough examination of a blind asylum, he had found that twenty-two per cent. of the inmates had no right to be there.

The Licensing of Midwives.—Dr. M. D. Mann, of Buffalo, said that in 1882 a Board of Midwifery had been established in Erie County, and had since been in action. This board had the power to examine and license midwives. The change in the practice of the midwives in that county had been salutary, and he therefore moved that the committee on legislation be requested to bring in a new bill establishing boards of midwifery in each county of the State. Carried.

A Note on the Use of Permanganate of Potassium in Diseases of the Skin.—Dr. L. Duncan Bulkley, of New York, said that he had first learned from a patient concerning the value of permanganate of potassium as a remedy for itching in various skin diseases. The mode of using it was to paint over the affected surface a one- or two-per-cent. solution of the salt, and allow it to dry. Sometimes it was advisable to follow this with a lotion of calamine and zinc. The permanganate, of course, left a brown stain, and by its oxidizing action reduced thickened patches of skin.

Water and its Relations to Disease.—Dr. W. P. Mason, of Troy, read a paper on this subject. After referring to the fact that turbid water was purified by the process of sedimentation, freed not only from the gross impurities, but also from micro-organisms, he described the almost magical collapse of a severe epidemic of cholera in Messina by changing to a pure water supply. It was well known that typhoid fever was frequently spread by impure water, and therefore by securing better water typhoid fever might be placed in the category of preventable diseases. The question was, Did it pay to secure such a good water supply? According to the State Board of Health, there were about seventy-five deaths yearly in Albany from typhoid fever, which meant at a very low estimate a pecuniary loss annually of $150,000. Allowing that ten per cent. died, and calculating the loss sustained in loss of time by those who ultimately recovered, it could easily be computed that Albany lost annually from this disease at least $290,000. In a certain locality statistics showed that the death-rate prior to the introduction of an approved water supply had been 7·94 in a thousand, whereas after the establishment of this new supply the death-rate had been only 3·83.

Dr. Lewis S. Pilcher, of Brooklyn, said that he desired to take this opportunity to bring in the report of the committee on hygiene relative to a bill now before the Legislature,

which proposed to absolutely forbid the cutting of river ice. He reported that this committee considered it perfectly proper to allow the cutting of ice from rivers with certain restrictions. It was well known that running streams underwent purification to a certain extent.

Dr. A. JACOBI, of New York, spoke in the same strain, calling attention to the mechanical purification that took place at the time of freezing.

Dr. V. R. MERRILL referred to the occurrence of a typhoid fever outbreak in the Chemung Valley, and the probable infection of the ice, although the latter had already been cut and stored for use during the coming summer.

Sepsis of the Newborn.—Dr. M. A. CROCKETT, of Buffalo, read a paper on this subject in which he said that a rise of temperature was often the first sign of disease in the newborn, yet, owing to the fact that such young infants were by custom handed over to the care of the nurse, the physician not infrequently failed to discover the early manifestations of disease. The author reported three cases of such sepsis. The first one, occurring in his own practice, was ushered in on the seventh day by restlessness. A few hours later there was fever, quickly followed by a series of convulsions, and death occurred in fourteen hours. No signs of inflammation were observed around the umbilicus. The convulsions began forty-eight hours after the fall of the cord—the usual period of inoculation of the tetanus bacillus. After having carefully observed twelve hundred newborn infants, a physician in Buda-Pesth advised tying the umbilical cord with a sterile cord close to the abdomen, the application of an aseptic dressing for three days, and then a renewal of the dressing on alternate days. To secure rapid mummification of the stump of the cord, the child should not be bathed until the cord had separated.

Dr. A. JACOBI said that, in addition to the umbilicus, there were other ways in which the germs could gain access, such as by the skin, the mouth, and the anus. Aspiration of the liquor amnii was a not infrequent cause of sepsis.

Dr. CHARLES JEWETT, of Brooklyn, while admitting the possibility of infection through these different channels, said that in his experience it had only been observed to occur through the umbilical wound.

The Question of Puerperal Self-infection.—Dr. CHARLES JEWETT, of Brooklyn, read a paper with this title. He said that ovarian abscess, pyosalpinx, suppuration of the vulvovaginal glands, or other pus-producing disease in or about the pelvis might be a source of puerperal fever, but the patient was then already an infected individual, and the infection was only an extension of the local process. Fortunately, this form of self-infection was rare. He said that three opinions had been prominently held regarding the question of whether or not a lying-in woman was liable to infection from bacterial products of her own vaginal secretions—viz.: 1. That the vaginal secretion might infect her, whether healthy or diseased. 2. That only pathological secretions could infect. 3. That vaginal bacteria had practically no part in the ætiology of childbed fever. One observer had recently found strictly normal vaginal secretions in only fourteen per cent. of pregnant women; another maintained that pathogenic bacteria did not live in the vaginal mucus. In health the vaginal secretion was acid in reaction; in disease it was either alkaline, neutral, or only feebly acid. Kronig, of Leipsic, had made a series of experiments from which he had been led to conclude that the streptococcus was killed in two or three days by healthy vaginal secretion, and that clinically the genital canal might be considered to be aseptic. After quoting copiously from the opinions and practice of many obstetricians, the author announced the conclusion that there was no clinical proof that puerperal infection could occur from normal vaginal secretion; that all childbed infection in previously healthy women was by contact; and that the ante-partum antiseptic douche was not ordinarily indicated—indeed was apt to be harmful.

A Medico-legal Note.—Dr. A. WALTER SUITER, of Herkimer, in a brief communication with this title, showed that recent experiments with bullets infected with the anthrax bacillus proved that the heat produced by the friction did not, as might have been reasonably expected, sterilize the projectile, and hence this opened up an additional source of wound infection.

(To be continued.)

SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL.

Meeting of December 4, 1895.

The President, Dr. PARKER SYMS, in the Chair.

Prostatectomy.—Dr. S. ALEXANDER presented two cases and read a paper on this subject. (See page 171.)

Epithelioma of the Tongue: Recurrence after Three Years.—The PRESIDENT presented a man, seventy years of age, who had been brought before the society a year before. When first seen, three years ago, he had been suffering for some time from an epithelioma of the tongue. The left half of the tongue had been removed by Whitehead's method. As this case had reached the three-year limit, and the growth had only just recurred, it was of special interest.

Erythema Nodosum.—Dr. ALEXANDER presented for Dr. Biggs a case of this kind occurring in a young adult. The case was of interest on account of its occurrence in a somewhat older subject than usual.

Dr. J. BLAIR GIBBS said that he had recently seen the operation of prostatectomy done by the double incision, although not exactly according to the method described by Dr. Alexander. An incision had been made in the base of the bladder and, after the removal of the prostate, drainage had been established both through the suprapubic and perineal openings. He would like to hear further regarding the comparative merits of the two methods.

Dr. ALEXANDER replied that the combined method, perineal and suprapubic incision, described by the last speaker had been first advocated by Dr. Belfield, of Chicago. Dr. Eugene Fuller had improved the operation by cutting through the mucous membrane of the bladder with a pair of serrated scissors, pushing up the mucous membrane on the inside of the bladder, and then enucleating the lobes of the prostate from above. But owing to the plexus of veins running over the prostate and closely connected with the mucous membrane, this operation was often attended with severe hæmorrhage. Another disadvantage of this high operation was the large cavity left after the removal of the prostate, which, being open to the inflow of urine, furnished an excellent surface for septic infection. In his own operation the mucous membrane of the bladder and prostatic urethra was not injured, and enough of the muscular stroma of the prostate was left to form a very good floor to the bladder.

Report of a Case of Ectopic Gestation.—Dr. A. BROTHERS reported a case of this kind, with the following history: Mrs. Y. W——, thirty-seven years of age, married twenty years, had begun to menstruate at the age of fourteen. She had given birth to six children, the youngest of whom was sixteen months old. This child had been nursed up to a month ago, when, thinking herself pregnant, she had taken

the child from the breast. Twenty-five days ago she had "spotted" a little for one day, and had then been free from any bloody flow for six days, after which time there had been irregular bleeding almost continuously. Both blood-clots and liquid blood had come away. With the exception of a severe fall during her third pregnancy, associated with uterine hæmorrhage, the history of previous pregnancies and labors had presented nothing abnormal. On her admission to the hospital it had been found that she was so stout as to render examination quite difficult. The temperature had been 99·8° F., and the pulse 108, and of excellent quality. With the exception of moderate pain in the right iliac and lumbar regions she had complained principally of the metrorrhagia. A local examination had revealed a soft cervix with patulous os, and an indistinct but quite tender mass in the right iliac region. A probable diagnosis of extra-uterine gestation on the right side had been made. On September 26, 1895, under anæsthesia, the patient had been again examined, and the uterus had been found to be enlarged. A sound had entered an empty uterus, but to a depth of an inch more than the normal. A cautious use of the curette had brought away only a little mucous tissue.

With the patient in the Trendelenburg posture the usual incision in the median line had been made. On opening the peritoneal cavity a large quantity of dark blood had oozed through the incision. It had been mixed with clots of various sizes. The omentum had been found adherent to the uterus and annexa, and had to be carefully detached. The left tube and ovary had been found normal, and had not been molested. On the right side a tumor of about the size of a hen's egg had been discovered at about the middle third of the tube, which with the ovary had been quite adherent to the surrounding tissues. After careful manipulation the mass had been brought up into the wound unruptured. The fimbriated extremity of the tube had been adherent to the intestine, and its opening clogged with clotted blood. Owing to the adhesions it had been difficult to secure a good pedicle and a portion of the ovary had been left. There had been some hæmorrhage after the removal of the tumor, which had rendered extra ligatures, flushing with water, and finally packing the wound with iodoform gauze necessary. Although the operation had been somewhat prolonged, the patient had stood it well and, at its termination, had had a good pulse of 108. Twenty-four hours later her condition had become critical, and, although there had been no active bleeding, the pulse had risen to over 140, the body surface had become cold, and there had been frequent efforts at vomiting. But, owing to the untiring efforts of the house surgeon, Dr. B. Nelson, she had begun to rally, and by the third day the pulse had come down to 100, and from this time on her recovery had been uneventful. She had been discharged from the hospital entirely cured after five weeks.

The specimen consisted of a large, dark-red, solid blood-clot distending the tube. It could be peeled out easily. No fœtus had been discovered. The speaker said that he believed the specimen to be an example of "tubal mole" or "apoplectic ovum." He said that the death of the embryo must have occurred at an early stage of pregnancy, and he quoted Pozzi as saying that "the surgeon who later performs an operation for its extraction often finds the greatest difficulty in establishing its true nature even by a microscopical examination of the walls, in which there are usually a few chorionic villi to be found." As a matter of fact, he said, the hospital pathologist had sent him a negative report.

Dr. Brothers said that the case was of peculiar interest to him because of his published statement regarding the electrical treatment of ectopic gestation. While he still believed it thoroughly established that electricity might cause the death and absorption of the embryo in certain cases in the early months of pregnancy, this case had taught him that active hæmorrhage might occur even to a dangerous extent without any external manifestations. There could be no question that in such cases the electrical treatment was entirely out of place, and that the only proper thing to do was to open the peritoneal cavity at once, remove the fœtal sac, and control all hæmorrhage.

Dr. C. C. Barrows said that the principal interest in such cases lay in the diagnosis. If this were correctly made prior to rupture he saw no reason why these patients should not be operated upon promptly and recover as easily and as satisfactorily as from any other cœliotomy. In his opinion, electrical treatment was entirely out of place, and it had been his invariable practice to operate as soon as he could be sure of the diagnosis of extra-uterine gestation.

Dr. W. Gill Wylie said that he had had a rather unusual experience within the last few months, and, as it had taught him much, he thought the specimens from these cases might not be uninteresting. He had always condemned the electrical treatment. His two cases had demonstrated not only that electrical treatment was improper, but that extra-uterine pregnancy might be dangerous even when only a few weeks advanced.

The first specimen had been removed from a girl of about twenty years, whom he had seen at an unusually early period in pregnancy. After she had been married about six weeks, she had menstruated, but abnormally. There had been only a slight flow at the second period, and then after a few days she had had continuous slight hæmorrhage. The history showed that the menstrual function had been normal up to the time of her marriage, the examination had led him to be suspicious of ectopic gestation, and he had fortunately found an enlargement which, together with other symptoms, had justified him in advising an exploratory incision. On opening the abdomen, he had found black clots and free hæmorrhage into the peritoneal cavity. The specimen showed a simple ovarian tumor which had ruptured while being removed, and on the other side a sac of an ectopic gestation. There had been very free hæmorrhage from the end of the tube on this side and at the time of the operation or just before a rupture of the tube. If he had delayed operating, in all probability dangerous hæmorrhage would have occurred before long. In his opinion, hæmorrhage often began in the very early weeks of pregnancy, and hence any other treatment than laparotomy was dangerous. An absolutely certain diagnosis could not be made except in a very few cases.

The second case had presented exactly the same physical conditions with the exception that there had been no displacement of the uterus, and the tumor had been on the left side. This patient had had an unusual hæmorrhage after a delay in menstruation. On opening the abdomen a simple ovarian cyst had been found on the left side, and on the right side a ruptured tube with clotted blood in the peritoneal cavity. He had found that the secret of preventing hæmorrhage in operating in these cases was to proceed as in the removal of the uterus, ligating the arteries separately, and making two distinct pedicles—one pedicle for the ovarian and one for the uterine artery. There was no necessity for the introduction of gauze packing or other procedures for the control of hæmorrhage where this method of operating was adopted.

Dr. Brothers said that he was glad that Dr. Wylie had

emphasized the danger of concealed hæmorrhage from the tube in these cases. The lesson that he had learned in his own case was that any treatment except laparotomy was improper where there was the least suspicion of internal hæmorrhage.

Erosion of a Rib by a Drainage-tube. — Dr. W. J. Chandler, of South Orange, N. J., reported a case of this kind. The patient, a laborer, thirty-one years of age, had been admitted to the Memorial Hospital, Orange, on March 12, 1894, suffering from empyema. On March 14th the pleural cavity had been opened by a simple incision between the seventh and eighth ribs on the left side, and about three quarts of pus had been withdrawn. A drainage-tube had been inserted and the cavity had been irrigated daily. After two weeks the patient had been discharged with orders to come to the outdoor department for dressings. For a time he had done so, but had finally ceased to come any more. After more than a year he had returned to the hospital and had stated that he had washed out the cavity himself up to July, 1895, when he had broken the tube, leaving part of it in the chest. Since that time the discharge had increased and had become quite offensive, and he had had a troublesome cough. On November 18th the rib had been resected and, after some search, a piece of disintegrated drainage-tube, about six inches long and bent on itself, had been removed. Since then the cough had entirely disappeared and the cavity was gradually closing. The speaker said that the erosion of the rib from the long-continued pressure and friction of the tube was worthy of note. In the adult a resection was preferable to simple incision in the treatment of empyema, for the drainage was better, and the tube could be removed earlier. This case also showed that it was better to retain hospital patients in the wards until the drainage-tube could be safely removed.

Dr. Brothers remarked that he had presented a similar specimen to the society some years ago.

(*To be continued.*)

MEDICAL SOCIETY OF THE COUNTY OF ONEIDA, NEW YORK.

Quarterly Meeting, held in Utica, January 14, 1896.

The President, Dr. Charles E. Smith, in the Chair.

Report of Fifty Appendectomies.—Dr. James H. Glass, of Utica, said that in offering this report he wished to say that it included all his operations to September, 1895, a fact which presumably had some influence on the mortality rate, assuming the faulty technique and judgment of the beginner. He also had recently concluded that perhaps his views as to complete operation, the immediate removal of the diseased appendix, the relief of adhesions, etc., might have been too radical to secure the least mortality. It was also fair to say that a considerable percentage of the cases had been of the most desperate character, an expectant plan of treatment having been followed unreasonably long, the operation decided upon as a last resort, and done many times under the adverse environment of the average country house.

The whole number of operations had been fifty.

Complications and Peculiarities.—In four cases, or eight per cent., fæcal fistulæ had resulted, all of which, however, had healed spontaneously, the gangrenous appendix in one case dropping off close up to the apparently sloughing cæcum. The condition of the patient precluding further interference, the opening had been packed with gauze, and a closure of the fistula had occurred after about three weeks. The abscesses in two of the cases had been notably large, fifty ounces of pus having been removed from an adult male after three weeks from the inception of the attack; another, in a female of fourteen years, containing over twenty ounces, the sac including an inch and a half of the lower margin of the liver and extending into the right iliac fossa.

Hepatic abscess had been present in one case. Three weeks after the primary operation—the field of which had nearly closed, it having been dressed with gauze—an abscess of the liver (presumably of embolic origin, for it had no direct communication with the original abscess) had developed, which had been incised, discharging a large amount of pus, the characteristic micro-organism of which had been *Bacillus coli communis.* All these patients had made good recoveries. The appendix had been found extraperitoneal in one case, probably as a result of a former attack; attached to the myomatous uterus, the Falloppian tube, etc., in others; and in one instance, anomalous, so far as he knew, had been found occupying the right inguinal canal with a small amount of omentum, as a strangulated hernia for which he had been called to operate. The gut had been excised and the operation completed after the radical method of Kocher, and the patient had made an uneventful recovery.

In all the cases in which bacteriological observations had been made the *Bacillus coli communis* had been found, the presence of streptococci bearing a more or less fixed relation to the acuity of the attack, as indicated by its clinical history. As nearly all the cases reported had been seen by him as a surgical consultant, it had been impossible to obtain a reliable daily record of the pulse and temperature for the purpose of demonstrating the fallibility of the temperature as an index of the condition in this class of cases. The histories of several had been complete up to the time of the operation with trifling variations from the normal temperature. There was to be observed a much closer relation to the gravity of the case, however, in the rapidity and quality of the action of the heart, which seemed a much truer reflex of the disease process. The average of the temperature and pulse at the time of the operation in the cases above reported, he said, sustained this position.

	Number.	Per cent.	Years.
Males represented	..	66	
Age average	..	..	34
Eldest	..	..	60
Youngest	..	..	4
Pulse average at time of operation, 116.			
Temperature average at time of operation, 100·2 .			
Quiescent cases	8	16	
Acute cases	36	72	
Unclassified cases	6	12	
Recurrent cases	24	48	
Perforating cases	33	66	
Abscess cases	36	72	
Gangrenous cases	8	16	
Tuberculous cases	2	4	
Concretions	19	38	
Foreign bodies (in both cases berry seeds)	2	4	
Appendix removed	45	90	
Recovered	39	78	
Died	11		
Average mortality rate	..	22	
Operation during attack	42		
Recovered	31	62	
Died	11	22	
Operation during quiescence:			
Recovered	8	100	
Died	0		
Operation during quiescence, incidental to other abdominal operations when the appendix was found adherent	4	50	

The Practical Value of the Newer Methods of Examination in the Diseases of the Stomach, with a Consideration of Inflation of the Stomach and Large Intestine for Diagnostic Purposes.—A paper on this subject was read by Dr. Henry L. Ellsner, of Syracuse, who wished to add the results of further investigations before his remarks were published.

A Case of Recurrent Trance posturally induced.—Dr. Smith Baker, of Utica, reported the history of a case, but, as his report was as yet incomplete, he stated that he would submit it for publication at a later date.

Book Notices.

Transactions of the American Gynæcological Society. Volume 20, for the year 1895. Philadelphia: W. J. Dornan, Printer, 1895. Pp. xlvii–633.

This society is fortunate in having for its secretary, who is charged with the editorship of its annual volumes of *Transactions*, a gentleman of such literary taste and attainments as have long been recognized in Dr. Henry C. Coe, of New York. This year Dr. Coe's labors have been, we infer, greater than usual, for the volume is somewhat larger than the average of its predecessors and, besides the ordinary index to the volume, it contains an index to all the volumes thus far published. It is taxing to make such an index; Dr. Coe has done it well, and has thus deserved the thanks of the society and of the profession. We hope the society will always have so competent a secretary.

The papers that were actually read before the meeting have already been published, either in full or in abstract, in the medical journals, together with summaries of the discussions. This fact does not detract from the value of the volume, but it makes it unnecessary for us to mention here the papers and discussions referred to. The additional matter contained in the volume embraces a report of the proceedings of the business meeting, the papers that were read by title, and the candidates' essays. The papers that were read by title were as follows: Deep Incision of the Parturient Cervix for Rapid Delivery, by Dr. J. Clifton Edgar, of New York; Trachoma of the Female Genito-urinary Tract, by Dr. Arthur W. Johnstone, of Cincinnati; The Symphysiotomies of the United States and of Canada, by Dr. Robert P. Harris, of Philadelphia; Late Infection in the Puerperal State, being a Plea for the Routine Manual Examination of the Interior of the Uterus after the Completion of the Third Stage of Labor, by Dr. Egbert H. Grandin, of New York; Artificial Abortion, by Dr. Henry J. Garrigues, of New York; and a memorial of the late Dr. William Goodell, with a portrait, by Dr. Barton Cooke Hirst, of Philadelphia.

The candidates' papers, being those submitted by gentlemen elected to membership at the meeting, were the following: Retroperitoneal Cysts—Report of an Unclassified Case, by Dr. John Duncan Emmet, of New York; A Further Study of Certain Phenomena observed in the Sudden Arrest of Lactation and in the Treatment of Inflammation of the Nipple and Breast by Bandaging and Rest, by Dr. Philander A. Harris, of Paterson, N. J.; Retroposition of the Uterus, by Dr. George W. Jarman, of New York; Hysterectomy for Puerperal Septicæmia, by Dr. W. Easterly Ashton, of Philadelphia; and Bacteriology in Pelvic Surgery, by Dr. Charles B. Penrose, of Philadelphia.

We have not space at our disposal for special comment on these individual contributions, and so will content ourselves with saying that the entire contents of the volume are well worthy of the careful attention of the obstetrician, the gynæcologist, and the general practitioner. For twenty years now the American Gynæcological Society has held its annual meetings and published its *Transactions;* its career has been most creditable, and we look to see it continued for many years of usefulness.

An American Text-book of Surgery. For Practitioners and Students. By Charles H. Burnett, M. D., Phineas S. Connor, M. D., Frederic S. Dennis, M. D., William W. Keen, M. D., Charles B. Nancrede, M. D., Roswell Park, M. D., Lewis S. Pilcher, M. D., Nicholas Senn, M. D., Francis J. Shepherd, M. D., Lewis A. Stimson, M. D., William Thomson, M. D., J. Collins Warren, M. D., and J. William White, M. D. Edited by William W. Keen, M. D., LL. D., and J. William White, M. D., Ph. D. Second Edition, carefully revised. Philadelphia: W. B. Saunders, 1895. Pp. xiv–1248. [Price, $7.]

Since the first edition appeared, in 1892, this book, according to the preface, has been adopted as a text-book by over sixty medical schools in this country. In the present edition a number of sections have been added and others have been expanded. The editors have taken "advantage of the kindly crtticism in the medical press to make good many deficiencies and to correct some errors." The volume forms a worthy index of the present position of American surgery and the character of its teachings is guaranteed by the names of its authors.

A Manual of Operative Surgery. By Lewis A. Stimson, B. A., M. D., Surgeon to the New York, Bellevue, and Hudson Street Hospitals, etc., and John Rogers, Jr., B. A., M. D., Assistant Demonstrator of Anatomy in the College of Physicians and Surgeons, New York, etc. Third Edition. With Three Hundred and Thirty-four Illustrations. Philadelphia: Lea Brothers & Co., 1895. Pp. xii–13 to 598. [Price, $3.75.]

According to the preface, this work has been almost wholly rewritten. The most important additions and modifications have been made in the surgery of the cranium and of the abdomen. To Dr. Rogers belongs the credit of having ably carried out the aim of the author, who only revised the manuscript and read the proof. The text is very concise, almost too much so in fact, and the illustrations and general form are good. It is a valuable reference volume.

An Essay on Malaria and its Consequences. By Robert Lindsay, A. M., M. B., F. R. C. S. E., Retired Surgeon, Army Medical Department. London: H. K. Lewis, 1895. Pp. 116. [Price, 4s.]

This is an attempt to show that the cause of "malaria" is carbonic acid. The work is absolutely valueless, and it is difficult to understand how or why any publisher was induced to bring it out.

The writer ignores the researches of Laveran, and he makes no mention of the *Plasmodium malariæ*. Quinine he regards with contempt. The book may find a place perhaps among collections of literary curiosities, or in the schoolroom as an awful example of crime against the king's English. One sentence—the narration of a case—contains 1,560 words, by actual count, and ends as follows, the punctuation and spacing being the author's:

"a little later she grew feverish,—delirious,—restless;—

near 4 A. M. she asked to be raised in bed, probably in hope of freer respiration, and was so;—very soon after that she simply ceased altogether to breathe,—and was dead; there was no post-mortem examination."

In another part of the book we note this interesting statement:

"—the midnight fever appears to be relit by the assiduities of preparation for the night, the effort and stimulus of the final partaking of nourishment, the getting and settling into the timeous [*sic*] refuge from external chill below the bedclothes, the sentiment of comfort in rest that bed suggests, with also some excitement of apprehension of what further malaise the night might bring;—and at any time, in an hour of comparative well being, some irregular incident, such as the coming on of a squall, or a thunder shower, or the fire going out, would have effect on her and bring on a 'cold chill,' more or less severe; while some event of an opposite, a warming or exciting character, would over come her with a 'hot bloom';"

After the perusal of such gems as the foregoing who shall dare to say that medical books are dry reading?

Surgery. A Practical Treatise with Special Reference to Treatment. By C. W. MANSELL MOULIN, M. A., M. D. Oxon., Fellow of the Royal College of Surgeons, etc. Assisted by Various Writers on Special Subjects. With Six Hundred and Twenty-three Illustrations, many of which are printed in Colors, about Two Hundred having been made from Special Drawings. Third American Edition. Revised and edited by JOHN B. HAMILTON, M. D., LL. D., Professor of the Principles of Surgery and Clinical Surgery, Rush Medical College, Chicago, etc. Philadelphia: P. Blakiston, Son, & Co., 1895. Pp. xxiv–25 to 1250. [Price, $6.]

THE first edition of this admirable work was published in 1891, and a second American edition appeared in 1893. More than seventy pages of letterpress and a hundred illustrations have been added to the original, and the volume now presented to the profession is a modern and practical treatise of great value. The additions made by the editor are inclosed in brackets, and are worthy of their distinguished author.

Outlines of Materia Medica and Pharmacology. A Text-book for Students. By H. M. BRACKEN, M. D., Professor of Materia Medica, Therapeutics, and Clinical Medicine in the University of Minnesota. Philadelphia: P. Blakiston, Son, & Co., 1895. Pp. 9 to 383. [Price, $2.75.]

THE work is well named outlines, for more of outline and less of substance we never saw within the covers of a text-book. To one who is already intimately familiar with the materia medica the book may be serviceable, but the preface tells us that "it is intended that it shall serve the purpose of a text-book for use in the study of materia medica, to facilitate note-taking in the lecture-room, and to aid in the laboratory study of drugs." To these we would venture to add another useful service the book might render—to aid in "cramming" for an examination. Yet, for all that, the work contains much that is good. Its arrangement is excellent. Its chemistry and botany are well condensed, as they should be, for medical students are embryo physicians, not pharmacists. The descriptions of physiological action and the sections on therapeutics, however, are the objectionable features, not because of what they contain, but of what they omit, for they are the veriest of skeletons. For instance, of the therapeutics of blue mass: "It may be used as a laxative, but calomel is generally to be preferred for this action. It may be used to produce the systemic effects of mercury, but other preparations are generally preferred for this action." And that is all for the uses of blue mass. Of solution of hydrogen dioxide: "The therapeutic use of this preparation depends upon its instability. It may be used locally for its cleansing and antiseptic action." That is all the student is given of the therapeutics of hydrogen dioxide, and from it he is (perhaps) expected to have an intelligent idea of the remedy and to be prepared to use it. Five lines suffice for the uses of the tinctures of iodine, and conclude with the statement that "they may be used by inhalation for the stimulating action of iodine in the treatment of chronic diseases of the respiratory tract." To the unpractised such a statement would hardly seem safe. The therapeutics of chloral hydrate occupies four lines and a half. The whole subject of convallaria is dismissed with eleven lines. These indeed are not selected sections of unusual brevity; they represent the therapeutical dimensions of the book. Is it strange, then, that medical education in this country is severely criticised if such books by chance are read abroad? The book can not be said to have a style, so sententious is it, but occasional crudities of phraseology do not add to its value. Witness "kolyseptic" (whatever that may mean) and albuminurea. The book as it stands is condensation gone mad, but from it might be constructed a work of value. It is a much attenuated patient, as it were, yet one whose skeleton is graceful and whose features are strong. Nourishment is what he needs, and from it there may grow a body healthy, strong, and great, but lacking it the case is hopeless.

Der Syphilisbacillus. Von Dr. VAN NIESSEN, Wiesbaden. Mit vier lithographirten Tafeln und einer Heliogravure. Wiesbaden: J. F. Bergmann, 1896. Pp. 94.

IT is not usual to receive a monograph from Germany which teems with so much conceit, such premature and illogical conclusions, and such utter ignorance as this one does. The writer candidly confesses that until April, 1895, he had never heard of the work of Klebs and Lustgarten in the same field; and yet asserts, in the succeeding sentence, that his is the priority of discovery. It is quite possible that the bacillus which Van Niessen has described is identical with Lustgarten's. If this is true, the opinion of many pathologists and syphilographers will be maintained, that Lustgarten discovered the true ætiological factor of syphilitic infection. The experimental work of Van Niessen shows nothing except that he has deluded himself. The book is full of false conclusions and of dicta opposed to the best bacteriological and hygienic teaching. The author promises to present to the profession shortly a "true antisyphilitic remedy" derived from culture of his bacilli. It is to be hoped that it will be more reliable than his statements. The best thing about the work is the series of lithographic plates, which are well executed.

The Value of Family History and Personal Condition in Estimating a Liability to Consumption. Published by the Mutual Life Insurance Company of New York, 1895. Pp. 23.

THROUGH its medical director, Dr. E. J. Marsh, the Mutual Life Insurance Company has decided that personal physical condition is of more prognostic value than a family history of tuberculosis. It considers a man a "fair risk" who, despite his tainted family history, maintains an average standard weight and who is in all other respects a well man. It would refuse a policy, or would give only a limited one, to an applicant below a standard of weight who seemed disposed to tuberculous invasion because of the presence of the disease

in sisters, brothers, or parents. From the view of the insurance company this is a logical scientific attitude.

Cerebral Hyperæmia, the Result of Mental Strain or Emotional Disturbance: the So-called Nervous Prostration of Neurasthenia. By William A. Hammond, M. D., late Professor of Anatomy and Physiology in the University of Maryland, Baltimore, etc. Second Edition, enlarged and improved. Washington: Brentano's, 1896. Pp. 5 to 118.

This little book, poorly printed on inferior paper, contains nothing new that is particularly noteworthy, and we are constrained to think that it will not add to the author's reputation.

The Medical Digest, or Busy Practitioner's Vade-mecum. Being a Means of Readily Acquiring Information upon the Principal Contributions to Medical Science during the Last Fifty Years. By Richard Neale, M. D. Lond., Member of the Dutch Medical Society of Batavia, Java. Third Edition. London: Ledger, Smith, & Co., 1896. Pp. xi–794.

Few of our readers will require an introduction to *The Medical Digest*, for the work is one which has long been well known. If some there are who do not know it, we would counsel them that they make its acquaintance, for we know of few books that are so thoroughly useful as this. It is not, as might appear, simply a tabulated collection of references to articles contained in medical journals. It is that, of course, but far more, too, for its references are often suggestions of what the articles contain, and therefore frequently sufficient in themselves. To all medical men who read the *Digest* must necessarily be of incalculable value, not only the writer and the teacher, but the practitioner as well, for in its small compass may be had what its subtitle justly states for it, "a means of readily acquiring information upon the principal contributions to medical science during the last fifty years." We gladly welcome the third edition of a work whose previous editions have been so helpful to medical men.

Appendix to the Medical Digest, or Busy Practitioner's Vade-mecum, including the Years 1891–'92–'93–'94, and to August, 1895. By Richard Neale, M. D. Lond., Member of the Dutch Medical Society of Batavia, Java. London: Ledger, Smith, & Co., 1896. Pp. 206.

The appendix to *The Medical Digest* modernizes that valuable work and covers the ground of medical contributions up to a very recent date. Its appearance is most opportune, for the years since 1890 have been very important ones to medical men, and marked by many a scientific advance. That the appendix should appear in conjunction with a new (third) edition of the *Digest* itself is also advantageous. We regard these two volumes as among the most valuable the physician can possess, and we do not cease to marvel at the magnitude of the work and particularly at its perfection and completeness.

Report of the Commissioner of Education for the Year 1892 to 1893. Volume I, containing Parts I and II.

The report of the Commissioner of Education for 1892 to 1893 is more interesting than such reports usually are, since it embraces a very full *résumé* of the educational exhibit at the Columbian Exposition, as well as the papers read at the World's Library Congress. The usual statistical tables and notes on foreign and home educational institutions appear in this volume. The French criticisms of medical education in the United States which the volume contains are well worth reading.

The Medical Muse: Grave and Gay. A Collection of Rhymes Up to Date, by the Doctor, for the Doctor, and against the Doctor. Collected and arranged by John F. B. Lillard. New York: I. E. Booth, 1896. Pp. 141.

This is certainly an entertaining little book and quite adapted to amuse the physician in an idle moment. Not that all its rhymes are gay, some are far from it, but the amusing ones predominate, and certainly it is better that it should be so. With many of these verses our readers are no doubt familiar, for they have appeared in several contemporaneous publications, lay as well as professional, and some few of them in the *Journal*. Taken as a whole, the collection is a good one and will no doubt serve its purpose, but of one or two of its verses we think the introduction ill advised.

BOOKS, ETC., RECEIVED.

An Atlas of the Normal and Pathological Nervous Systems. Together with a Sketch of the Anatomy, Pathology, and Therapy of the same. By Dr. Christfried Jakob, Practising Physician in Bamberg, etc. With an Introduction by Professor Dr. Ad. v. Strümpell. Translated and edited (authorized) by Joseph Collins, M. D., Instructor of Nervous and Mental Diseases, New York Post-graduate Medical School, etc. New York: William Wood & Co., 1896. Pp. xxvii–3 to 232. [Price, $3.50.]

Epidemic Ophthalmia. Its Symptoms, Diagnosis, and Management, with Papers upon Allied Subjects. By Sydney Stephenson, M. B., F. R. C. S. Ed., Surgeon to the Ophthalmic School, Hanwell, W. Edinburgh and London: Young J. Pentland. New York: Macmillan & Co., 1896. Pp. viii–278. [Price, $3.]

Color-vision and Color-blindness. A Practical Manual for Railroad Surgeons. By J. Ellis Jennings, M. D., Lecturer on Ophthalmoscopy and Chief of the Eye Clinic in the Beaumont Hospital Medical College, etc. With Illustrations. Philadelphia: The F. A. Davis Company, 1896. Pp. ix–115. [Price, $1.]

Twenty-eighth Annual Report of the New York Orthopædic Dispensary and Hospital. October 1, 1894, to October 1, 1895.

Vital Statistics of the City of Binghamton, N. Y. Annual Statement for the Year ending December 31, 1895.

Conservative Surgery on the Battlefield and First Aid to the Wounded. By N. Senn, M. D., of Chicago. [Reprinted from the *Journal of the American Medical Association.*]

The Early Recognition of Carcinoma of the Cervix. By Hunter Robb, M. D. [Reprinted from the *American Gynæcological and Obstetrical Journal.*]

Electricity in the Treatment of Exophthalmic Goitre. By Robert Newman, M. D. [Reprinted from the *Journal of the American Medical Association.*]

Supplementary Report on the Success of Electrolysis in the Treatment of Urethral Strictures. By Robert Newman, M. D. [Reprinted from the *Journal of the American Medical Association.*]

A Physician on Vivisection. Extracts from the Annual Address before the American Academy of Medicine, Washington, May 4, 1891. By Theophilus Parvin, M. D., of Philadelphia.

Bio-chemistry in its Relations to Nervous Diseases. By G. W. McCaskey, M. D., of Fort Wayne, Ind. [Reprinted from the *American Medico-surgical Bulletin.*]

The Treatment of Malignant Tumors by the Toxines of the Streptococcus of Erysipelas. By N. Senn, M. D. [Reprinted from the *Journal of the American Medical Association.*]

The Early History of Vaginal Hysterectomy. By N. Senn, M. D. [Reprinted from the *Journal of the American Medical Association.*]

The Ætiology, Pathology, and Treatment of Intestinal Fistula and Artificial Anus. By N. Senn, M. D. [Reprinted from the *Journal of the American Medical Association.*]

Thoroughness in Medical Education. By Hunter Robb, M. D., Cleveland. [Reprinted from the *Western Reserve Medical Journal.*]

Hypertrophic Rhinitis. By Edward J. Bermingham, M. D. [Reprinted from the *New York Medical Times.*]

Rhinological Don'ts. What not to do in Nasal Affections. By Edward J. Bermingham, M. D. [Reprinted from the *Texas Medical Journal.*]

On some Difficulties in Reference to the Early Surgical Treatment of Appendicitis. By Carl Beck, M. D. [Reprinted from the *Journal of the American Medical Association.*]

On Intubation and the Use of Diphtheria Antitoxine in Croup. By Charles A. Hough, M. D., of Lebanon, Ohio. [Reprinted from the *Cincinnati Lancet-Clinic.*]

Tetany, with Illustrative Cases. By George W. Miles, M. D., of Oneida, N. Y. [Reprinted from the *Medical News.*]

Sarcoma of the Nasal Cavity. Ligation of both External Carotids. Decided Beneficial Effect. By M. D. Lederman, M. D. [Reprinted from the *Medical Record.*]

A Contribution to the Study of Some Forms of Albuminuria associated with Kidney Tension, and their Treatment. By Reginald Harrison, F. R. C. S. Eng. [Reprinted from the *Lancet.*]

Les diverses phases du strepto-bacille du chancre mou. Par P. G. Unna. Traduit par le Dr. Menahem Hodara. [Extrait du *Journal des maladies cutanées et syphilitiques.*]

New Inventions, etc.

THE IMPROVED GYROMELE.

By Fenton B. Turck, M. D.,
CHICAGO.

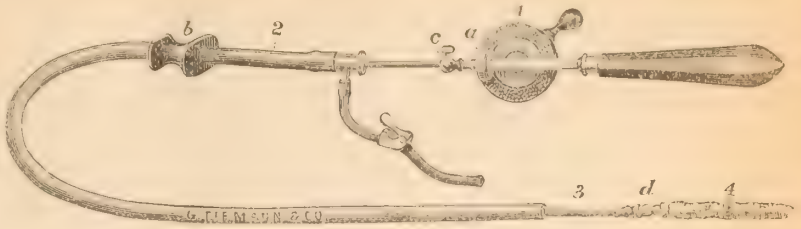
The use of the gyromele has proved to be of great value in the diagnosis and treatment of diseases of the stomach. The instrument as it now is meets with great success at the hands of the general profession. However, I have made improvements that in some cases are of advantage.

Instead of drawing the tube to and fro, to reach the different parts of the stomach, the tube in the improved gyromele remains stationary. The tube passes through a small rubber button or spool which the patient holds between the teeth, while the cable slides backward and forward to reach the desired area.

The cable is covered with a soft, close-fitting rubber tube which makes it entirely smooth. The covered cable revolves within the outer stomach tube.

The sponge covers a spiral. The end of the spiral fits into a socket securely and tightly. However, it may be detached with ease, when so desired.

The revolving apparatus has been made to run noiselessly, with perfect smoothness and evenness. The wheel is of metal (thin plate), covered on one side by unpolished soft rubber. This rotates against a smaller rubber wheel, causing no noise whatever.



The new gyromele consists of four parts:

No. 1. Revolving apparatus.

No. 2. Stationary outer tube.

No. 3. Cable covered with tight-fitting rubber tube.

No. 4. Sponge-spiral attached to the cable.

a, of No. 1, represents the thin metal wheel covered on one side by soft, unpolished rubber which rotates on a smaller wheel, *a'*, by friction.

No. 2 is the stationary outer tube held by the button or spool *b*. At the end of the tube, which reaches to the cardia only, is a bearing within the tube to make the cable run more smoothly.

No. 3 is the cable, which is fastened to the revolving apparatus by the screw *c*.

No. 4 is the sponge, which fits into a socket of the cable at *d*, and may be removed at will.

By drawing the revolving apparatus back and forth through the stationary tube the cable passes into the stomach and moves along the great curvature. It bends upon itself and passes up toward the pylorus and to the lesser curvature. Rapid revolutions are produced, and it is observed that all parts of the stomach are reached. One of the great benefits of the gyromele is its vibratory effect. The vibrations can be seen and felt. Experiments on dogs and observations made during laparotomies have shown that the vibrations extended from three to four inches from the point of contact of the sponge with the stomach wall.

By the use of the improved gyromele a greater vibratory effect is observed, since a greater part of the surface of the stomach comes in contact with the revolving cable and sponge.

The outer end of the tube of the improved gyromele can be closed sufficiently to introduce air or solutions for treatment through the side opening of the tube and prevent their escape through the outer end of the tube.

Note.—These cuts are made from instruments manufactured by George Tiemann & Co., New York.

No. 1, The Plaza.

Miscellany.

Euthanasia.—In the February number of the *Catholic World* Dr. Cornelius M. O'Leary, in an interesting article on this subject, says that the doctrine of euthanasia is by no means a figment of the imagination, but has its advocates among the advanced disciples of evolution. Even not many years ago, he says, a society was organized in London whose object was to aid its members to an easy death whenever, owing to various circumstances, the burden of life had become intolerable. This extraordinary association included

the names of men well known in literary and philosophical circles, but for obvious reasons it fell under the ban of the law and was dissolved.

To consider the subject, says the author, as it lies beyond the province of mere sentiment and trenches on the domain of the ethical and the practical, at a recent meeting of the International Medico-legal Congress, held in New York, a distinguished member startled the conjoint wisdom of that dignified body by stating that it was not at all unusual for medical practitioners to take the matter of life and death into their own hands. This aspect of the question, he says, is one of decided interest and leads up to some important considerations.

The physician, he adds, who would administer chloroform or give a hypodermic injection of morphine for the purpose of putting a patient out of pain by ending his life, is clearly guilty of murder and is amenable to the law that has determined a punishment for that crime, and it can not be pleaded in extenuation of his conduct that the patient's life was hanging by a thread, that he had but a few moments to live, and that it was better to end his sufferings at once than to prolong them unnecessarily. Those few moments are his as inviolably as years, and no one has a right to take them from him. Wherever the means employed for the relief of suffering are of themselves, obviously and necessarily, calculated to produce death, we must impute the intention of bringing about such a result to the person employing them, and adjudge him guilty of homicide. For there exists a proportion between the act and its consequences, and when an intelligent agent perceives that proportion he is responsible for the consequences of his action. A physician, then, is never justified in giving an overdose of a drug, even though he may say that he does so only for the purpose of relieving pain; for an overdose is of itself, obviously and necessarily, calculated to destroy life, and the person administering it becomes guilty of murder in the first degree.

And a physician is not justified in administering an ordinary dose when the condition of the patient, for one reason or another, is such that he can not safely tolerate it; for then an ordinary dose becomes equivalent to an overdose.

Of course, says the author, it is understood that, in this case, the physician is fully aware of the condition of the patient which inhibits the normal dose of the drug. For if any doubt on this point should exist in his mind, then the means he employs for the relief of pain are not, of themselves, obviously and necessarily, calculated to destroy life, and the presumption lies in favor of administering the drug; for it is to be supposed, there being no evidence to the contrary, that the patient's condition, as regards the drug in question, is a normal one, and so the intention of the physician, being that of relieving pain, justifies its use. Should, however, death follow a normal dose, such a result must be regarded as accidental, and not as coming within the scope and purview of the agent's intention. It is not necessary that death should be contrary to the intention, when the intention does not affect the result. What the physician aims at is simply to relieve pain, and when he employs for such a purpose suitable means and no others, he can be held answerable for no consequences but such as he had in view. If, therefore, notwithstanding the suitableness of the means he employs for the accomplishment of his purpose, a different result should ensue, it should be regarded as having taken place in a manner not contrary to the agent's intention, but as a result that lay beyond the scope and purview thereof. His intention in the premises was to relieve pain, and his failure to do so would denote a consequence, not merely that lay beyond the scope and purview of his intention, but one that was really contrary to it. This will be better understood when we consider the language of the casuists, *præter intentionem agentis*. Here the proposition does not merely mean contrary to the intention of the agent, but beside it as having nothing to do with it.

Were a physician, says Dr. O'Leary, to administer a drug in the hope that thereby the patient's life might be saved and yet death should ensue, the death might be properly said to have taken place contrary to the intention of the agent, and not merely in a manner lying beyond its scope and purview, since it was his intention to prevent its occurrence. The intention it is which, in every case, imparts its morality to an action, and when the intention is absent the action assumes the character of indifference as regards the agent. But then the intention must be really absent, for it would be absurd to proclaim its absence when the action was inseparable from consequences we pretended not to intend.

For this reason, he says, no physician is justified in using drugs that are inherently fatal or in quantities that lead to fatal consequences, and no subtlety of reasoning can make his course appear different from that which a highwayman pursues when he knocks his victim on the head with a bludgeon.

The difference between the condition of a patient lying at the point of death and that of a perfectly vigorous person is, in this respect, an accidental one, and does not affect the issue. Should a physician administer a drug to the former for the purpose of shortening his days, he has the explicit intention to do murder; but should he administer a fatal dose for the purpose of relieving pain, then his intention to relieve pain is explicit, while his intention to murder is implicit; but murder it is whether the intention is explicit or implicit.

This, Dr. O'Leary believes, is the view of the matter taken by all conscientious physicians. When, therefore, he says, the statement was made that it was customary for physicians to hasten death by the use of powerful drugs whenever the case was hopeless or when the patient was suffering intense pain, to administer the *coup de grace*, as it were, the speaker slightly strained the truth. The true physician, he who is thoroughly faithful to his calling, endeavors in the first place to restore health to the sick by employing the resources at his command, and, when he can not do this, to lighten that heaviest of all physical burdens, which is incurable disease. It is a noble mission, and he who fulfills it, says Dr. O'Leary, becomes the stanch and sterling friend of humanity.

Antipyrine in the Treatment of Measles.—The *Gazette hebdomadaire de médecine et de chirurgie* for January 16th contains an article on this subject in which the writer remarks that among the indications observed in measles one of the most important is that of lowering the temperature, which, aside from all complications, frequently reaches 103·5° F., or even 104°, during the eruption.

It is interesting to note, says the writer, what value antipyrine presents as an antithermic in these cases. M. Comby has given this drug to patients when their temperature reached or exceeded 103°, employing the following formula:

Syrup	3·8 ounces;
Antipyrine	75 grains.

M. Leprévost, who studied the effects of antipyrine in forty-seven cases of measles, arrived at the following conclusions: 1. Antipyrine is well tolerated by children. 2. It produces prompt lowering of the temperature, not always to a very great extent, but with certainty in the immense majority

of cases. 3. The maximum of the fall of temperature is obtained at the end of two hours in most cases; it is frequently maintained for twelve hours, and may persist for thirty-six. 4. Antipyrine seems to act in cases in which simple baths, or those to which mustard has been added, and moist applications have failed. In all cases, if the immediate antithermic effects were not more intense they were more lasting. 5. It has no action on the classic thermic cycle of measles or on any of its complications. 6. The most varied complications have no influence at all on the results obtained with the antipyrine, and the failure of the drug should not be imputed to them. 7. No antithermic reaction, or a very feeble one, is often an unfavorable element in the prognosis. This rule is not absolute, and, as recovery may supervene in a case in which there has been no reaction, so may death occur with an abnormally high or an abnormally low temperature in patients who previously showed a notable lowering of the temperature. 8. Antipyrine has no action at all on the rapidity of the pulse. 9. It seems to ameliorate dyspnœa in a slight degree. This action does not often begin until two hours after the ingestion of the drug.

The Granular Leucocytes.—In No. 353 of the *Proceedings of the Royal Society* there is an abstract of an article on this subject by Dr. G. Lovell Gulland, communicated by Mr. J. N. Langley. All varieties of leucocytes, says the author, are merely stages in the development of a tissue. They may be divided for convenience, and with regard to the presence or absence of granules, into three main groups, the hyaline, the acidophile, and the basophile. These forms, he says, are all derived from the lymphocytes, which are the daughter-cells derived from the mitosis of all leucocytes, except the largest forms. The lymphocyte develops into the small hyaline forms, from which the three groups branch off.

The cells may remain *hyaline*, and attain their maximum development in such cells as the large phagocytes of the alimentary canal or the giant cells of bone marrow. In this case they remain sluggishly amœboid, their centrosomes are very evident, and the cytomitoma and microsomes, while visible, are not easily made out.

In the *acidophile* group are included the so-called neutrophile and amphophile cells, which are really oxyphile, and the eosinophile or coarsely granular cells. In the transition forms from the small hyaline cells to the oxyphiles the mitoma of the cell body becomes more visible, and it is this, says the author, rather than the presence of granules which gives rise at first to the finely granular appearance. The granules are simply the microsomes of the mitoma. In the transition forms between the oxyphile and eosinophile cells some of the microsomes become larger and take up acid dyes and iron-hæmatoxylin better than others, and when the large eosinophiles are reached the threads of the mitoma have become thicker, and also take up iron-hæmatoxylin. The microsomes in the eosinophiles vary greatly in size; they are arranged subradially, with the largest microsomes usually at the periphery. In this group the centrosomes are well seen, better in the eosinophiles than in the oxyphiles.

The cells of the *basophile* group vary immensely in size and shape. The nucleus is generally ellipsoidal, except when the cells are actively amœboid, probably because the cell body is usually relatively large. As the cells increase in size the amount of basi-chromatin in the nucleus becomes increased out of proportion to the size of the nucleus. This has no relation to mitosis, which has only once been observed in these cells. The centrosomes can be seen fairly easily in the smaller rounded forms. In the larger forms they are difficult to make out, and it seems possible that there may be several subordinate centrosomes. These cells are derived from the small hyaline forms by an increased visibility of the mitoma and an increase in size of the microsomes, which at first are usually very irregular in size, and do not exhibit metachromasia with methyl blue. As the cells become larger, so generally do the granules; they become more uniform, but are never all quite of one size. Metachromasia becomes more constant, and the mitoma more evident, especially in those cells which are moving, or which are greatly branched. The staining of the microsomes is never quite the same as that of the nuclear chromatin.

The granules of leucocytes are therefore, says Dr. Gulland, *not* products of the metabolic activity of the cell imbedded in a structureless protoplasm, as has hitherto been supposed, but represent an altered condition of the microsomes. They always form part of the cytomitoma, and are therefore plasmatic, and not paraplastic. They are probably concerned with amœboid movement, and they and the rest of the mitoma are more visible the more active the cell. No definite conclusions as to their chemistry can yet be arrived at, but all the altered microsomes probably consist of nucleo-albumins, the basophiles being richer in phosphorus than the eosinophiles.

In diseased conditions it is probably impossible to say what organ is affected from the kind of leucocytes present in excess in the blood.

A Horse Leech in the Larynx.—In an abstract of an article from the *Archives de médecine et de pharmacie militaires*, for November, 1895, published in the *Presse médicale* for January 11th, M. Le Damany cites the following case which came under M. Pauzat's observation: A soldier while drinking from a spring felt a pricking sensation near the hyoid bone. Hoarseness, slight dyspnœa, moderate coughing, and spitting of blood followed. The presence of the leech could be ascertained by direct examination with or without the laryngoscope. Extraction by the natural passages was impossible, and spraying with a carbolic-acid solution, the administration of oil of turpentine, and intratracheal injections of salt water proved useless.

As the dyspnœa was increasing, M. Pauzat decided to practise tracheotomy, and on the following day the leech appeared in the mouth, and the patient drew it out with his fingers. Recovery took place without any accident.

From this M. Pauzat concludes that: 1. Attempts at extraction by the natural passages should not be made unless the leech is situated above the glottis, as they are dangerous if the leech is situated below it. 2. Opening the air-passages, when it is necessary, should always be done below the point where the leech is lodged, in order to assure freedom of respiration.

The Therapeutic Abuse of Opium.—Dr. G. Walter Barr, of Keokuk, Iowa, contributes an article to the *Journal of the American Medical Association* for January 25th in which he remarks that, while our knowledge of pathology and physiological action has long since passed the point of the treatment of symptoms, yet we still cling to one drug which does most of its work in relieving symptoms only. A drug, he says, which has the dynamic energy of opium must always be an equally potent agent for therapeutic good.

Chemically and physiologically, opium is perhaps the most complex drug in the pharmacopœia. It contains a large number of active principles which have been isolated, and a number more that are probably present in the crude drug, although it is maintained that they are merely products of chemical manipulation. It may also contain some that have not yet

been identified as chemical entities by laboratory research. It seems a little strange, says Dr. Barr, that, with the present tendency to prescribe the use of drugs uncombined with others, so many active principles should be so often prescribed at once under the title of opium. That the combination of so many principles has, by virtue of the correlation of physiological forces, a dynamic action of its own, is obvious; that this action, he says, can not be prognosticated with much certainty is proved by the large number of cases of alleged idiosyncrasy. That opium is of great therapeutic value is maintained at the outset; that it is overrated is also contended.

When the natural polypharmacy of opium itself is avoided, says the author, its most active constituent, morphine, is nearly always resorted to. The effects of morphine upon the secretions, upon metamorphosis, and upon the disposal of waste products are exactly what is not desired in most cases of disease. Yet morphine is usually chosen to produce certain effects upon the nervous system without regard to its energetic action in other directions.

Codeine, says Dr. Barr, is being substituted for morphine to a gratifying extent, although it is not yet fully appreciated. He states that he is thoroughly satisfied that it does not produce bad habits, even in highly sensitive neurotics, and that it acts with little energy upon the digestive tract and the heart. As a somnifacient, he says, morphine has been nearly driven out of use by the products of the modern chemist, and it should be discarded also in other fields. As a cardiac stimulant, morphine acts quickly and energetically, but the after-depression which always comes after its use may be avoided by using strychnine, nitroglycerin, caffeine, digitalis, or even atropine, in the proper dose. To use opium or morphine for a condition of nervous excitation and exalted reflexes is, in many cases, like stunning a refractory patient with a club. Valerian, hyoscyamus, and the bromides will generally give better therapeutic results of greater permanence, and with less risk.

It is in those diseases of the digestive tract which are commonest in summer, says Dr. Barr, that opium is the medium of the most harm. Close observation, he says, must drive the physician to the conclusion that very rarely indeed is opium indicated in the treatment of diarrhœa. This affection usually needs some drug which increases the excretory functions, and thus drives out of the body something which, by its presence, is producing the flux from the bowel. Opium temporarily relieves the chief symptom at once, and when its influence has subsided and the disease still persists the condition is called a relapse or a new attack.

It is certainly true, says the author, that opium has a real value therapeutically in certain inflammations, in great pain, in rare forms of diarrhœa, as a splint for the intestines, and in some other directions.

The New York Academy of Medicine.—At the last general meeting, on Thursday evening, the 6th inst., the following papers were to be read: Subphrenic Abscess, by Dr. Carl Beck, and The Deformity of Hip Disease Illustrated by Automatic Models, by Dr. A. B. Judson. Dr. Henry G. Piffard was to exhibit an improved electric centrifuge for urine, milk, etc.

At the next meeting of the Section in Surgery, on Monday evening, the 10th inst., Dr. Robert T. Morris will read a paper on Appendicitis. Patients will be presented and pathological specimens, new instruments, and apparatus exhibited.

At the next meeting of the Section in Genito-urinary Surgery, on Tuesday evening, the 11th inst., Dr. Eugene Fuller will report a case of Nephrectomy Secondary to Nephrotomy, and Dr. L. Bolton Bangs will read a paper entitled Some Acute and Chronic Conditions of the Prostate Gland. Cases and new instruments will be presented.

At the next meeting of the Section in Pædiatrics, on Thursday evening, the 13th inst., Dr. Henry Koplik will read a paper on Retropharyngeal Abscess. There will also be a presentation of patients.

Sanguinal.—Dr. Otto Dornblüth, a Rostock neurologist, contributes to the *Deutsche Medizinal-Zeitung* for January 16th an article in which he gives his experience with a preparation called sanguinal, made by a Cologne firm of apothecaries, who say that it is composed of forty-six per cent. of the salts normally found in the blood, forty-four per cent. of muscle albumin, and ten per cent. of hæmoglobin, and therefore corresponds almost perfectly to normal blood in composition. The author says that he has not lost confidence in the old inorganic preparations of iron; on the contrary, he says, in many cases they will accomplish more good than the thousands of organic iron compounds that have during the last few years been vaunted as their superiors. Nevertheless, he often observes cases of debilitated persons with nervous symptoms manifestly due to a defective constitution of the blood in which the preparations of iron fail altogether or at least do far less good than in chlorosis. In such cases the use of quinine in small doses, a third of a grain three times a day, in conjunction with the iron, does some good; regulation of the diet does not help much in most instances, for very often the appetite has been destroyed; and nothing but a mild course of hydrotherapy, such as, unfortunately, is not at the command of physicians in general, is of particular benefit. Under such circumstances one can not resist the thought that the blood defect present must be something different from the simple lack of iron that is at the bottom of chlorosis. At all events, in view of the difficulty of chemical examinations of the blood, Dr. Dornblüth resolved upon a systematic course of therapeutical experiments, and it happened that sanguinal was among the first of the preparations with which he experimented. In many cases its effects were surprising; in numerous cases, ranging from the slightest nervousness up to the severest forms of neurasthenia, in which the previous use of all sorts of preparations of iron had been unavailing, the use of sanguinal speedily brought about an improved condition, manifested by a blooming appearance, a decided feeling of well-being, and a good appetite. The dose of sanguinal is given as three pills, three times a day, preferably taken before meals. The author does not state how much sanguinal each pill contains, so it may be presumed that the drug is in the German market in the form of pills of a certain weight.

Journalistic Boasting.—There are very few influential medical journals that ever indulge in the vulgarity of boasting of their circulation. The *British Medical Journal* recently stated that its circulation was over 19,000, and that that was three times as large as the circulation of any other medical journal published in the United Kingdom, and probably larger than the combined circulation of the others. In another article the *Journal* congratulates the members of the British Medical Association on the magnitude and growth of its work, and intimates that the *Lancet* is far behind itself. In reply, the *Lancet* says: "So many members of the association daily become our subscribers, so many are upon our editorial staff and among our personal friends, that the success of the association could not be other than grateful to us, even if it did not benefit the profession at large to as full, generous, and

scientific an extent as is frequently set out in the columns of its official organ. But to some of the sequel we take great exception. It appears from a paragraph that follows that 'a recrudescence of the once popular vogue' of the *Lancet* might 'threaten the supremacy' of the *British Medical Journal*, and in support of the amiable suggestion that we are in a position to require recrudescence we find absolutely false statements with regard to our circulation. Now, this kind of thing belongs to the days of one Mr. Pott; it is a recrudescence of the editorial manners of the rival editors of Eatanswill, and it is not creditable to the great and rising position of the association that such foolishness should appear in the columns of its journal. We should not have replied either to the insinuation or the false statements had it not been for the fact that so many of our friends, being members of the association, may expect it of us: for our position is so well known to all whom it concerns that no necessity whatever exists for us to state it and shriek about it. That position is now exactly what it has ever been—the highest—and is due now to what it has been always due—honesty and thoroughness of purpose. As a result our circulation is the largest purely medical circulation in the world where the subscribers expect to get nothing whatever in return for their money save their paper, while our opinions are everywhere quoted because they are known to be duly weighed and sincerely held, and our high price does not enable our younger rivals to detach subscribers from us. But this we hope that they will continue to attempt, for healthy rivalry is good for all of us and must result in the giving to the profession the best that journalism can do. But they should make their attempt by legitimate methods; not by false insinuations or incorrect statements, but by producing a better paper than the *Lancet*, one giving a more comprehensive review of matters of medical interest, and one more resolute to see that the medical man has justice everywhere, whatever his position or his plight."

In the *British Medical Journal* for January 18th we find the following:

"Mr. H. C. Burdett, the editor of the *Hospital*, writes to say that the circulation of the *Hospital* (if that is to be counted as a medical journal, and we must state that we had not counted it so, but rather as a journal having relations to hospitals and nurses) averages 9,500, and that the number printed of the *Lancet* (which is, of course, a very different thing from its actual circulation) reaches 10,000 a week. We take these figures in good faith from Mr. Burdett, who is a very competent authority. The issue of the *British Medical Journal* is 19,500."

We are familiar with the excellent journal entitled the *Hospital*, and are quite unable to understand why it should not be classed as a medical journal, or why the "number printed" is any more "a very different thing" from the "actual circulation" in the case of the *Lancet* than in that of the *British Medical Journal*.

The Quack as a Tempter.—An esteemed correspondent sends us a flaming advertisement of a pair of "clairvoyants,' together with the following letter which one of them had the effrontery to send to him:

"Dear Sir: I learned your address accidentally through a gentleman who was stopping at the hotel, and take the liberty of addressing you for reasons which the following will explain: I have had considerable experience in the medicine line and managing advertising doctors, and, as I am very favorably impressed with this point, I am desirous of establishing a medical institute for the treatment of chronic diseases, and intend hiring one or two graduate physicians to take part in same. Said physician's names need not appear in any of the advertising matter, as will advertise as medical institute. I can have plenty of physicians in Chicago, but would prefer one in this part of the country, the main requisite being that he be a man of good appearance, a good talker, and a graduate physician, and willing to do all in his power to build up and maintain a good business, for which I am willing to pay a good salary.

"I think I have written sufficiently to enable you to understand my meaning, and if you are open for an engagement of this kind, would be pleased to hear from you concerning salary you would wish to begin with; better salary as soon as spring opens; also if you wish to engage on a percentage. I would prefer to engage on a salary and percentage. An institution of this kind should average from $100 to $200 per week under the management I feel myself capable of, judging from past experiences, with the proper doctor in connection, and sometimes higher. Let me know what salary you will accept with ten per cent. commission on gross receipts; also a straight salary on commission. Also state your age, and if married; and your personal appearance, dark- or light-complexioned, hair, whether smooth-faced, mustache, or beard; or, better still, a picture, which I will return. Of course, this is all unnecessary unless you wish to consider this line of work, but, as I have heard . . . . was very dull at present, I thought you might wish to make a change.

"I inclose ad., which will explain within itself the business I am at present engaged in. But, of course, I shall discontinue this as soon as I start in other. I can get very nice offices for the purpose, with steam heat and modern conveniences on main street in centre of town. An early reply will oblige, etc."

Odontodol.—In an abstract from the *Presse médicale de Paris* for December 25, 1895, published in the *Lyon médical* for January 5th, the writer says that odontodol is the name given in Italy to a new preparation which is superior to all others known in the treatment of toothache. The formula is as follows:

Cocaine hydrochloride, Essence of cherry-laurel,	each.....	15 grains;
Tincture of arnica.....	150	"
Solution of ammonium acetate.....	300	"

If the pain is caused by caries, a piece of cotton saturated with the liquid is put into the cavity of the tooth; if it is caused by inflammation of the pulp, the mouth should be washed out with a solution consisting of 450 grains of odontodol diluted with 750 grains of a tepid decoction of linseed. Finally, if the pain extends to the entire jaw, the painful surface should be thoroughly rubbed with several drops of odontodol, after rinsing the mouth with the solution.

Ligation of the Umbilical Cord.—M. Pierre Budin contributes an article on this subject to the *Obstétrique* for January 15th in which he describes a method of ligating the umbilical cord. Physicians, he says, know the danger that the existence of a voluminous cord brings to the newborn. As Wharton's gelatin becomes dry under the action of the bodily temperature the umbilical blood-vessels very soon cease to be compressed when the cord has been tied with a linen or silk thread. If the child then makes any effort, if it cries, or if it is too tightly bandaged, a serious hæmorrhage supervenes which is sometimes fatal.

With regard to the procedures which may prevent this hæmorrhage, says the author, the following may be mentioned: Two or three ligatures may be applied to the cord, leaving a small space between them. This method is scarcely

successful, for, as the drying of Wharton's gelatin affects various parts of the cord, all the ligatures become useless at once.

Cutting of the amniotic covering at several points has been advised, pressing out a certain quantity of Wharton's gelatin, and afterward practising ligation. It has also been recommended to isolate the three umbilical blood-vessels at the free extremity, cut the cord, and tie each one separately. These two methods, says M. Budin, are good, but, as Wharton's gelatin is viscous and glutinous, they are not very easy to put into practice. M. Tarnier and others, he says, have urged the employment of a rubber thread for a ligature, as it gives excellent results. There are, however, says M. Budin, some objections to its employment. If it is not well chosen, it slips on the amnion and fails to do what is required; it also undergoes some changes after being kept for a certain length of time, and it will crack when it is being used.

For several years the author has employed the following procedure: 1. With a single or double linen thread, about twenty-five or thirty centimetres in length, which has been soaked in a solution of corrosive sublimate, he makes a tight circular ligature at a distance of from two to three centimetres from the umbilicus. He then cuts the cord a centimetre above the ligature. 2. The surface of the section of the cord is held upright and the two ends of the thread are separated and one of them is placed in the groove made by the ligature and carried around the cord until it is exactly opposite the spot where the thread is tied. Then the two ends are brought up and crossed over the surface of the section, tightly drawn, and tied. This second ligature separates the blood-vessels of the umbilical cord; the vein and one artery are on one side and the second artery is on the other side. 3. Each half of the cord is then ligated in the following manner: The two ends of the thread are passed to the right and to the left, one around each half of the cord, and are crossed, tightened, and knotted. 4. If the knot has been placed at one of the angles of reunion of the first and second ligatures, one of the ends is again passed around the median groove, that is, the groove of separation; the other end is passed around the cord in the outer groove, and the two ends are then crossed, tightened, and knotted.

M. Budin states that he has employed this method of ligating the umbilical cord for several years, and that he has never observed a single hæmorrhage.

Copper Poisoning from Vine Leaves.—The *Journal des praticiens* for January 18th states that a number of cases of poisoning have been observed in Austria after the ingestion of butter which is put up in wrappers of vine leaves that have been treated with sulphate of copper in order to preserve them from fungous growths or from mildew. These cases have occurred rather frequently, and the Austrian government has absolutely forbidden this mode of wrapping, not only butter, but fruits.

The feeble toxicity of copper seems, says the writer, to have been well demonstrated by M. Galippe, but it must not be forgotten that the preparations employed in the cultivation of the vine are complex compounds which are often impure and particularly apt to contain arsenic.

The French Association for the Advancement of the Sciences will hold its next congress in Tunis, Carthage, on April 1st, 2d, 3d, and 4th. The Section in Physics will be held under the presidency of M. J. Bergonie, of Bordeaux. The subject for discussion will be The Critical Study of Various Optical or Photographic Methods of Photometry from a Scientific and Industrial Point of View, a report on which, made by M. André Broca, will be sent to all persons who desire to take part in the discussion. It is requested that the titles of all papers be sent as soon as possible to the secretary of the association, 28 rue Serpente, Paris, or to M. J. Bergonie, 6, bis, rue du Temple, Bordeaux.

Airol, a New Substitute for Iodoform.—Haegler (*Beitr. zur klin. Chir.*, xv, 1; *Ctrlbl. f. Chir.*, January 18, 1896) thus enumerates the qualities that a substitute for iodoform should possess: 1. It should be less poisonous than iodoform. 2. It should be inodorous. 3. It should not irritate the skin. 4. It should contain enough iodine, or an equally efficient constituent, and give it up under the same conditions that iodoform does.

Airol is an iodine substitution compound of dermatol (basic bismuth gallate). The author has made comparative trials of airol, dermatol, and iodoform, and has satisfied himself that airol fulfills the first of these requirements. Moreover, it is free from odor and does not irritate the sound skin. Two points of its superiority to iodoform are its property of parting with a portion of its iodine in the presence of the warm fluids of the body and the fact that, by reason of the bismuth contained in it, it is in a high degree desiccative. It is applied for the most part with a powder-blower; it is used also in the form of a ten- or twenty-per-cent. gauze, in that of a ten-per-cent. solution in collodion, and, for tuberculous affections, in that of a ten-per-cent. emulsion in a mixture of equal parts of glycerin and water.

In the course of a year the author has used airol in about two thousand cases, and has observed its decided effect on the tuberculous process, but no untoward action. In a word, he regards it as a really useful substitute for iodoform.

The Treatment of Furuncles of the Eyelid.—Lanvole and Gygax, according to the *Therapeutische Wochenschrift* for November 24, 1895, recommend systematic bathing of the lid with one of the following mixtures:

1.	Salicylic acid	5 parts;
	Borax	3 "
	Distilled water	300 "
2.	Precipitated sulphur	3 parts;
	Ammonium chloride	1 part;
	Rose water	50 parts;
	Spirit of camphor	20 "

In obstinate cases they recommend the daily application of the following wash, not only on the lid, but also among the lashes:

Spirit of camphor, Precipitated sulphur,	each	5 parts;
Lime water, Rose water,	each	50 "
Gum arabic		1 part.

The Society of the Alumni of the City (Charity) Hospital.—The fifty-fifth stated meeting was held on Wednesday, February 5th, under the presidency of Dr. R. C. Newton. The order for the evening included a paper by Dr. W. L. Stowell, entitled Pleurisy, its Ætiology and Pathology, and one by Dr. Meriam on the Symptomatology, Treatment, and Sequelæ. Specimens, cases, and new instruments were presented.

The New York Pathological Society.—At the next meeting, to be held in the Academy of Medicine's building on the evening of February 12th, the special subject will be Lesions of the Central Nervous System. Specimens will be presented by Dr. Thacher and Dr. Van Gieson.

Lectures and Addresses.

THE RELATION OF RECTAL SURGERY TO OTHER SPECIALTIES.

A CLINICAL LECTURE AT THE POST-GRADUATE HOSPITAL.

BY CHARLES B. KELSEY, M. D.,
PROFESSOR OF ABDOMINAL AND RECTAL SURGERY.

GENTLEMEN: I shall show you this afternoon three cases in no way peculiar and yet illustrating perfectly the idea I wish to impress.

Please bear in mind that they are all cases sent to me for disease of the rectum—two in private practice and one in the dispensary—and that in two of them the diagnosis of disease of the rectum was correct, and in the third perhaps not to be wondered at, though an error.

CASE I.—An intelligent working woman of middle age. The note from her physician which she brought to the clinic said she needed an operation for piles. She was examined too superficially, and two weeks ago to-day was operated upon before you for piles. Not four days had elapsed before she calmly told me she was no better, that I had not hit the cause of her trouble, that she was just as bad and in just the same way as she was before, and that she proposed to stay in the hospital till she was well. Few patients will treat you as well as this one has treated me, and not only tell you of your errors but give you a chance to correct them. It now turns out that this patient, although she had piles, never suffered from them, and that what she came to the hospital for was not to be operated upon for piles but to be cured of a constant pain in the back and pelvis and of an almost insurmountable difficulty in defecation. A vaginal examination reveals at once that there is endometritis with salpingitis. This is shown by the pain and by the tenderness on pressure. The uterus also is much out of position. It is strongly retroflexed, and is lying in the hollow of the sacrum, and as I pass my finger into the rectum beyond it I find a large fæcal mass which leads me to think that the uterus, by its pressure on the bowel, causes a certain amount of obstruction. The uterus is, however, movable, and can be thrown into anteversion by the finger.

We will now try to finish the cure of this patient. First, we will curette the uterus for the endometritis and salpingitis. Then we will open the abdomen and fasten the organ to the abdominal wall out of the way of the rectum.

You observe that the organ is much increased in size, as the curette passes in nearly five inches. You see also, now that I have opened the abdomen, that the annexa are fairly healthy.

CASE II.—This little patient you have also seen before, but some months ago. She then was suffering from a tight congenital stricture at the usual point, an inch and a half from the anus. I say "little patient," because she weighs scarce ninety pounds; but she has been married three years, had an abortion produced a few months after marriage, and was in hospital several weeks with peritonitis as a result. When she was sent to me she complained of great difficulty in defecation and much pain in the pelvis, all of which was easily accounted for by the stricture of the rectum.

This was cut in the usual way before the class, now nearly a year ago. At present she has regular daily passages, the stricture is kept well open by bougies, and, as far as the rectum goes, she has been greatly benefited.

Still, she is a chronic invalid. Sexual intercourse is almost impossible. She has frequent attacks of pelvic pain, which keep her in bed for days at a time; and she tells me sorrowfully that, though she is certainly better so far as the rectum is concerned, she is really no better in general health, and thinks there must be something else the matter. The "something else" is simply a double pyosalpinx due to her abortion, with an irritable caruncle in the urethra, which is exquisitely sensitive to touch.

We will now proceed to try to cure this patient also by opening the abdomen and removing the pus sacs. The caruncle we will leave till later. This, again, is an operation quite in the line of gynæcology, and yet absolutely necessary if we wish to relieve this patient.

You see that the two ovaries are quite healthy, and therefore we will leave them, acting on the rule of removing no more than is necessary. Both tubes are converted into pus sacs as large as eggs. The adhesions are slight and easily broken, and the tubes come out without rupture. There has been no soiling of the peritonæum, and the abdomen can safely be closed again.

CASE III.—Sent to me from the western part of the State as a case of stricture of the rectum. The most superficial examination proved this to be an error, though the man had used bougies for years. He had no symptoms of stricture, but complained of a wearing pain in the rectum, which had reduced him to a condition of chronic invalidism. On closer questioning, we found the pain was also in the penis, in the testicles, and along the left spermatic cord. There was also an irregular frequency in micturition. Sometimes the patient could hold his water for hours, again he was up six or eight times a night. There was no vesical calculus and no cystitis. Dr. Fuller kindly examined the patient with me. His diagnosis was chronic gonecystitis, the vesicles, especially the left, being larger than normal, very tender, and exuding bloody semen on stripping. Pressure on the left vesicle caused an immediate attack of all his painful symptoms.

To avoid, if possible, the serious operation of extirpation of the vesicles, I did a perineal section before you some weeks ago, at the same time thoroughly dilating the neck of the bladder. Temporarily there was marked improvement, but this lasted only a short time, and the patient is now as bad as ever. He is miserable, unfit for work at his trade, is willing and anxious to submit to anything that gives hope of relief, and I shall now remove one or both vesicles, depending upon how we find them when exposed. This is an operation still in its infancy. So far as my knowledge goes, it has been done only twice in this country, once by Dr. Weir, a general surgeon, and once by Dr. Fuller, who teaches you genito-urinary diseases.

On the cadaver I have tried the operation by a posterior median incision and removal of the coccyx exactly as in Kraske's operation. Although the vesicles can be reached in this way, the wound needs to be very deep, and the rectum, in order to remove both vesicles, must be completely lifted from its attachments. I shall therefore make in this case an incision across the perinæum just in front of the sphincter ani, and, with a sound in the bladder for a guide, gradually work my way upward between rectum and bladder till the vesicles are reached.

The operation, as you see, has been long, bloody, and manually difficult. In another case I should keep to the Kraske incision, which, though it seems unnecessarily large, renders the operation much more precise, and is attended by much less bleeding and risk of tearing the rectum, as we have done in this case. The perineal incision makes only a deep funnel-shaped wound, and the small end of the funnel is blocked by the prostate, above which are the vesicles. I have, I think, completely torn out and scraped away the left vesicle, and I have in my hand a beautiful little calculus of the size of a small pea which I will pass around. There were several in the vesicle, but the others were no larger than pinheads, though the little stone quarry was easily appreciable to the touch, and formed the guide to the vesicle itself. Without them I never should have been certain in my own mind that I had really reached the diseased spot through this incision.

We will now suture the rent in the rectum and, after putting in a few sutures to narrow the skin wound, leave the rest to heal by granulation.

And now, gentlemen, let me in a few words make the point to which all this leads. These patients all came to me as a specialist in diseases of the rectum, and they all had symptoms of disease of the rectum or they would not have been sent. In two there was disease of the rectum, in the third only constant pain there, due to disease near by. All three of them I hope to cure, but not by operating upon the mucous membrane of the lower three inches of the alimentary canal and leaving the rest to some abler surgeon than myself. And this is why I so often impress upon you that a specialist in diseases of the rectum should be able to do something more than tie off piles or cut a fistula if he wishes to be considered either a surgeon or even an ordinarily intelligent and successful practitioner. Would any gynæcologist worthy the name have done the work you have seen me do this afternoon, and then sent the patients to me, the one for the piles and the other to have the stricture of the rectum divided? Because they would not accounts for the fact that gynæcology has a place of its own as a specialty. And because too many so-called rectal specialists do not do what the gynæcologist does as a part of his specialty and try to cure their patients, but have reached the limit of their surgical knowledge when they have cured a patient's piles, is the reason why the specialty of the rectum has not yet won for itself a proper recognition in the profession. Some of you are here especially to study diseases of the rectum and some to go home and practise as specialists in this department. If I have conveyed to you by this long afternoon's work what I think is involved in such a course I shall be very happy. My own idea of a rectal specialist can be stated in few words: It is one who is prepared to cure the patients who come to him with trouble in the rectum.

Original Communications.

THE DIAGNOSIS OF HYSTERIA.*

By HUGH T. PATRICK, M. D.,
PROFESSOR OF NEUROLOGY IN THE CHICAGO POLYCLINIC;
INSTRUCTOR IN CLINICAL NEUROLOGY,
NORTHWESTERN UNIVERSITY MEDICAL SCHOOL;
CONSULTING NEUROLOGIST
TO THE ILLINOIS EASTERN HOSPITAL FOR THE INSANE, ETC.

Apparently there is no disease of the nervous system that has fewer terrors for the diagnostician, be he specialist or general practitioner, than hysteria. In the presence of this functional Proteus we are prone to feel a confidence that we could not assume toward even the simpler of the organic affections; but unfortunately a wide and accurate knowledge of hysteria not only "involves a knowledge of the diagnostic symptoms of almost every other disease of the nervous system," † but of many affections not falling within this category, and I think I have seen more straightforward mistakes in diagnosis made in connection with this disease than with any other nervous affection. It might appear to many a work of supererogation to seriously consider the differential diagnosis between hysteria and brain tumor or abscess, between hysteria and acute meningitis or myelitis, between hysteria and angina pectoris, hysteria and articular rheumatism, cancer of the stomach, Jacksonian epilepsy or tetanus, and yet the most astute diagnosticians have made mistakes in just such cases. It seems unnecessary to insist that occasionally a positive diagnosis is not only exceedingly difficult but absolutely impossible in the present state of our knowledge.

It will be appreciated that in a concise paper, such as this must be, some statements are unavoidably a trifle more dogmatic than a scrupulous exactitude would warrant; nor would it be feasible to attempt a systematic or full treatment of the subject, as that would necessarily embrace a consideration of the diagnosis of an almost interminable multiplicity of medical and surgical diseases. The aim shall be simply to call attention to a few discrete points which seem to merit a wider dissemination or a more respectful attention.

In any consideration of the clinical aspect of hysteria it is well to bear in mind that we have to do with a *disease*—a morbid entity. It seems necessary to occasionally reaffirm the truism that the symptoms of hysteria are real; that an hysterical paralysis is as truly paralysis as that due to cerebral hæmorrhage; that an hysterical anæsthesia is as genuine as that due to division of a nerve trunk, and that a patient may suffer as acutely from hysterical pain as from that due to inflammation. It is not only unjust to the pa-

* Read before the Mississippi Valley Medical Association at its twenty-first annual meeting.

† Gowers, *Dis. of the Nerv. Syst.*, vol. ii, p. 1019.

tient and, incidentally, most inimical to therapeutic success to call the symptoms "all imagination," but it is in the highest degree unscientific and inaccurate. There is, too, a tendency, which the facts do not warrant, to consider all symptoms of hysteria to a greater or less degree as simply simulation on the part of the patient. For this reason, although it is convenient to speak of "the simulation of organic disease by hysteria," I prefer to speak of a "similarity of symptoms," or to use some other like phrase, even though it is not so concise as the word "simulation," which is apt to perpetuate a misapprehension in some minds. Furthermore, in saying that hysteria simulates such and such a disease, we seem to say that it assumes characters that do not properly belong to it; whereas, the symptoms in question—for instance, ataxia, contracture, paraplegia—belong quite as properly to the symptom-complex of hysteria as to the other disease said to be simulated.

A few medical men seem to still cling to the fallacy that the severer—what have been called the more typical—cases of hysteria are practically confined to France. It is probably true that they are more abundant there; but even superficial observation will show that they are far from rare in other European countries and in the United States, and a reasonably careful perusal of the literature will confirm this conclusion. They are certainly sufficiently frequent here to make it incumbent on every practitioner to have a working knowledge of such cases.

Another point worth remembering is that no age beyond infancy is exempt. I have seen a girl of nine with typical hysterical attacks occurring in the initial stage of acute pleurisy with effusion and a child of five with hysterical paresis of the arms following rheumatism. I have now under observation a young girl of fourteen who had a complete and persistent hysterical hemiplegia, and I saw some time since a girl of twelve with typical hysterical polyarthralgia. Lannelongue and Joffroy have reported similar cases in children of six and eleven years. Clopatt* collected two hundred and seventy-two cases of hysteria in children under the age of sixteen, and of these one hundred and seventy-one began under the age of twelve and twenty under the age of three years. Hysteria in children is much the same as in adults, but a few peculiarities are worthy of mention. Of the sensory disturbances children are more apt to exhibit hyperæsthesia than are adults, and the disease is more frequently monosymptomatic. This latter statement applies especially to motor troubles—paralysis, paresis, contracture, etc.—which more often occur without the accompanying anæsthesia generally found in adults.† In the child, too, we may have simple delirium without convulsions or stigmata as the only manifestation of the neurosis,‡ and closely allied to this state is hysterical somnambulism.# It is almost exclusively children who have presented the combination of symptoms called hysterical pseudo meningitis, which may very closely resemble cerebro-spinal meningitis, but I have seen one striking case in an adult.

Although it was shown generations ago that the uterus had nothing to do with this disease named after it, virile hysteria is often considered to be a rarity. This is a mistake, although statistics as to the relative frequency of hysteria in the two sexes vary enormously. During seven years of general practice I happened to see more cases of hysteria in men than in women. Since then (four years) I have seen many more in women, but I do not know the proportion.* Marie found among those applying for admission to the hospitals of Paris severe hysteria more frequent in men, the mild form more frequent in women.† My friend Dr. Souques‡ found in a general hospital service (Broussais) among four hundred and forty-one male and two hundred and forty female patients, twenty-six cases of hysteria in men and six in women. That is, hysteria was more than twice as frequent in men. Leuch,# reporting eighteen cases of hysteria in men from the service of Eichhorst in Zürich, found the proportion of men to women as one to six and a half. The eighteen cases occurred in a total of 5,234 hospital patients; that is, constituted 0·34 per cent. of the whole number of cases. Gilles de la Tourette says the proportion is about one to three, but some observers put it as low as one to twenty or thirty. This much is certain: that if physicians were more generally on the lookout for the affection in men, more cases would be discovered. One of the manifestations particularly frequent in men is arthralgia, probably on account of the relative frequency of the commonest ætiological factor, traumatism. Hysteria in men is more frequently monosymptomatic, is more persistent, preserves more uniformly the same form, and is more refractory to treatment than in women; the patients are oftener depressed and melancholic. Although, as stated, monosymptomatic hysteria is relatively more frequent in children and men, I would venture to call attention to the fact that it is far from rare in women; convulsions, paralysis, contracture, poor vision, tremor, polyuria, etc., existing quite alone. Indeed, this has seemed to me to be rather more frequent on this side of the Atlantic than with our continental brethren. Not only may concomitant symptoms and hysterical stigmata be absent, but the so-called "hysterical disposition" or "hysterical tendency" may be entirely wanting. One might almost make the paradoxical statement that pronounced hysteria may occur in an individual not in the least "hysterical." Manifest loss of will power and self-control, with unbridled impulsiveness (diminished inhibition), are classical; the physician, as a rule, expects to find excessive demands for attention and sympathy and great sensitiveness to annoyance. If these conditions are not

* *Études sur l'hystérie infantile*, Helsingfors, 1888.

† Riegel. *Zeit. für klin. Med.*, 1883, p. 453.—Huchard, *Thèse de Paris*, 1881.

‡ Charcot. *Leçons du mardi*, 1887–'88, p. 127.

Although somnambulism is sometimes hysterical, Gilles de la Tourette certainly goes to extremes when he asserts that all cases not epileptic are of hysterical origin.

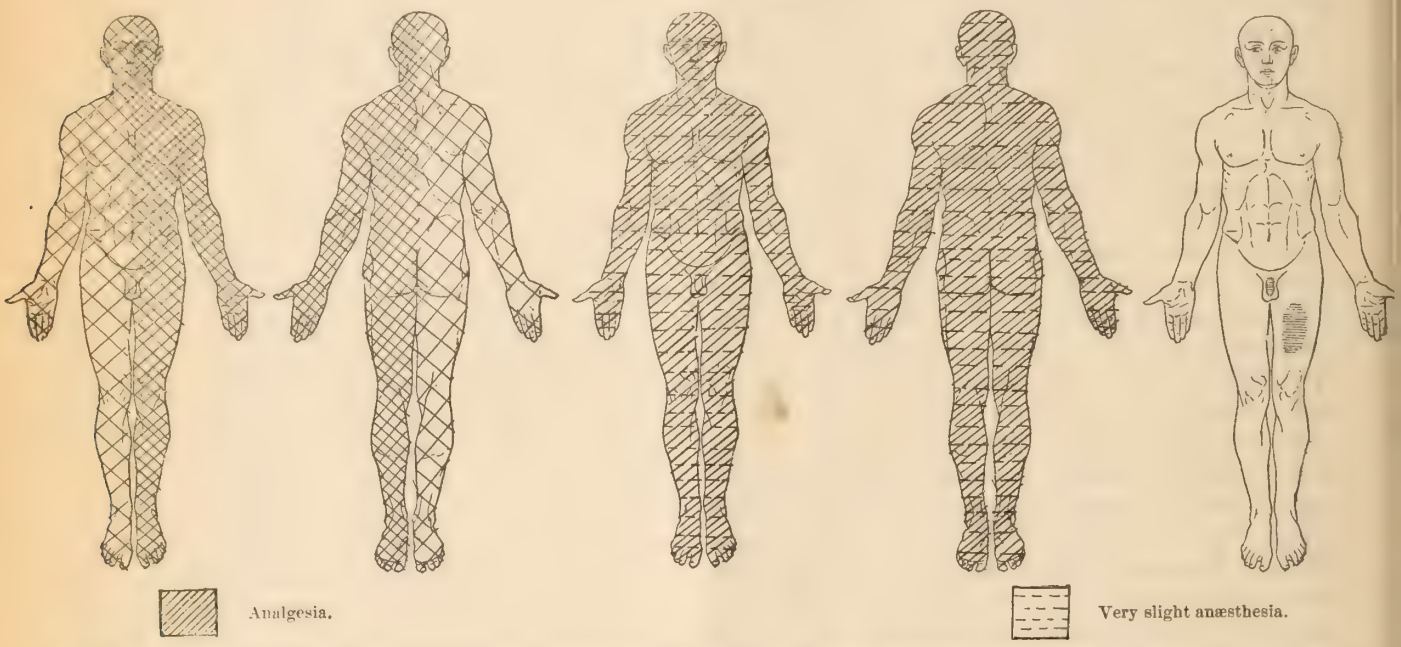
* It is a peculiar fact that almost identical cases occurring in men and women are called hypochondria, neurasthenia, or nervousness in the former and hysteria in the latter.

† *Prog. méd.*, July 27, 1889.

‡ *Arch. gén. de méd.*, August, 1890.

Deutsche Zeit. f. Nerv., Bd. i, p. 506.

found he is apt to decide at once against the presence of hysteria. True, they are often prominent, but they are far from being a *sine qua non* of the affection. With the kind permission of M. Déjerine I examined at the Bicêtre a man, aged sixty years, with hysterical monoplegia brachialis who, except that this was his third attack, had never shown other signs of hysteria. I examined one afternoon in the private hospital of Professor Mendel two cases of hysterical monoplegia of traumatic origin—one in a man over sixty years, the other in a robust young butcher, aged about thirty years, neither of whom had ever shown, as far as could be learned, the least indication of hysteria. The patient from whom Figs. 1 to 5 were made had given no signs of after the age of fifty are rare. It is a mistake to suppose that an hysterical affection from injury or mental shock must come on suddenly. It is true that the *onset* may be sudden, although it is not necessarily so, but the development is gradual, and probably due to the growth of a subconscious imperative conception (*idée fixe*). The history of numerous shrines, of the "faith cure," and of the host of nostrums, as well as of legitimate medicine, would furnish abundant examples of long-enduring and stable hysteria. I might cite the following: Harlan * has reported a case of hysterical blindness in a healthy man, which existed unchanged for ten years. Charcot had a case of hysteria under constant observation for more than thirty years, and



Figs. 1 to 5 are taken from the same person, who had hysterical paralysis of the left leg. When first examined he exhibited, as indicated in Figs. 1 and 2, a well-marked generalized anæsthesia and analgesia which was more pronounced on the left side. After a few days of treatment the anæsthesia had nearly disappeared, the analgesia persisting, as shown in Figs. 3 and 4. There was still some difference between the two sides, which is not indicated in the cut. After six months there remained only anæsthesia of the penis (and urethra) and of a patch on the front of the left thigh, Fig. 5.

an hysterical tendency up to the time of the onset of the present trouble (when he was thirty-one years old), and even since he has not been at all "hysterical" in the ordinarily accepted sense of the word. I saw recently a young woman, twenty-two years old, with severe hysterical convulsions and paresis, anorexia, and emaciation, who was apparently absolutely normal until the sudden onset, seven weeks before I saw her, occasioned by great mental shock. These cases are mentioned simply as illustrations, not because of their rarity or peculiar characters.

The sudden appearance, fluctuating character, and instability of hysterical symptoms, their sudden disappearance from slight causes, and the palpable influence of observation and of deep mental impression are diagnostically so important that they seem to have taken complete possession of the medical mind to the exclusion of other equally important considerations. A gradual development of symptoms, with stability and long persistence of the condition, does not militate against hysteria. As a corollary to this proposition it may be stated that hysteria may be observed in persons advanced in years, although initial symptoms the patient still preserved his hemianæsthesia at the age of seventy-five. In another case an hysterical hemianæsthesia persisted for over forty years, and the negative result of the autopsy confirmed the diagnosis.† I saw in Mendel's Poliklinik a man with an hysterical paraplegia which he had had since 1867, a period of twenty-six years. At the Bicêtre I examined a patient with an hysterical paraplegia of fifteen years' duration, and another with hemiplegia of like origin of nineteen years' standing.

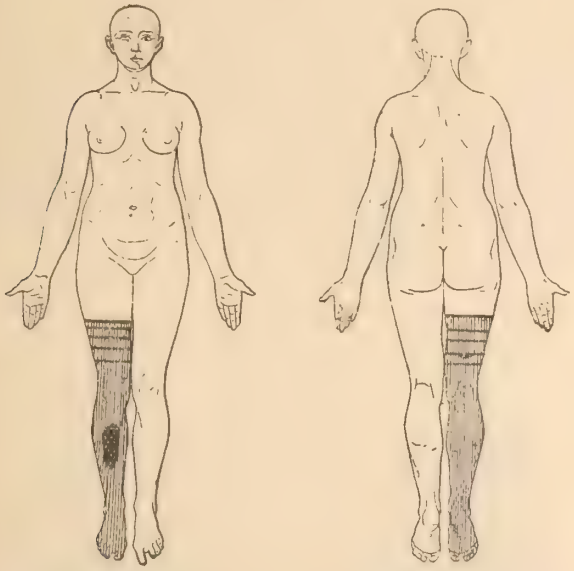
Gowers,‡ speaking of the diagnosis of hysteria, says: "The first and most important consideration is the absence of any unequivocal symptom of organic disease"; but the presence of unequivocal symptoms of hysteria would seem (to me) to be of at least equal importance, for the presence of organic disease does not in the least exclude hysteria any more than the presence of hysteria excludes organic

* *Medical News*, January 11, 1890.

† Gilles de la Tourette. *Traité de l'hystérie*, etc., vol. i, p. 202 Paris, 1891.

‡ *Diseases of the Nervous System*, vol. ii, p. 1019.

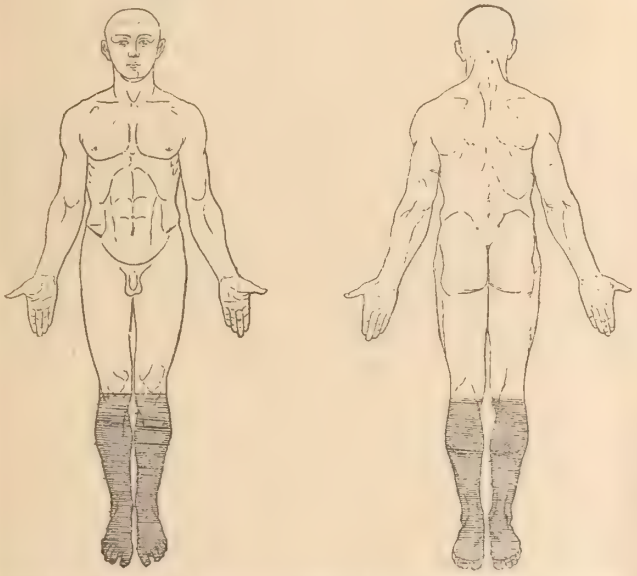
disease. One would scarcely say that in the diagnosis of multiple sclerosis the first consideration is the absence of positive signs of hysteria, although either disease may closely imitate the other, and they are not rarely coexistent. Indeed, the combination of hysteria and organic disease in the same patient is of daily occurrence.



FIGS. 6 and 7.—Case of hysterical pain simulating sciatica and anterior crural neuralgia. Moderate and varying hyperæsthesia, always with sharp borders. The heavy lines indicate the shifting of the border and the black spot an area of hyperæsthesia more intense and constant than the other. It also had well-defined margins.

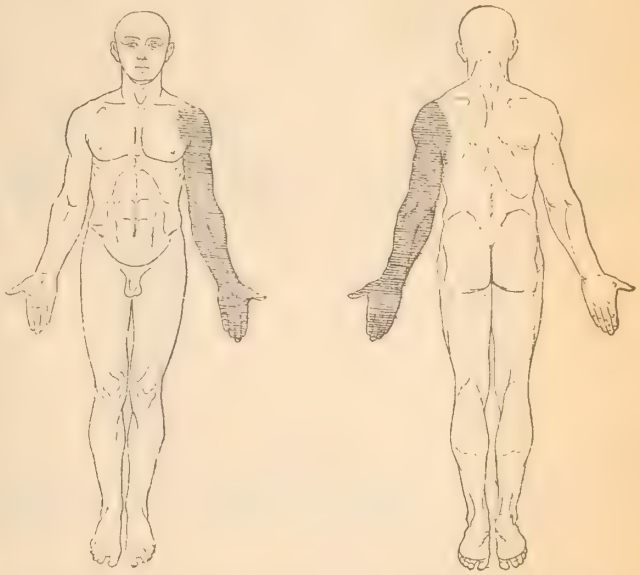
I would beg leave, then, to call attention to a few of the positive signs and peculiarities of hysteria.

Some of the most characteristic stigmata of hysteria are found in connection with its anæsthesiæ.



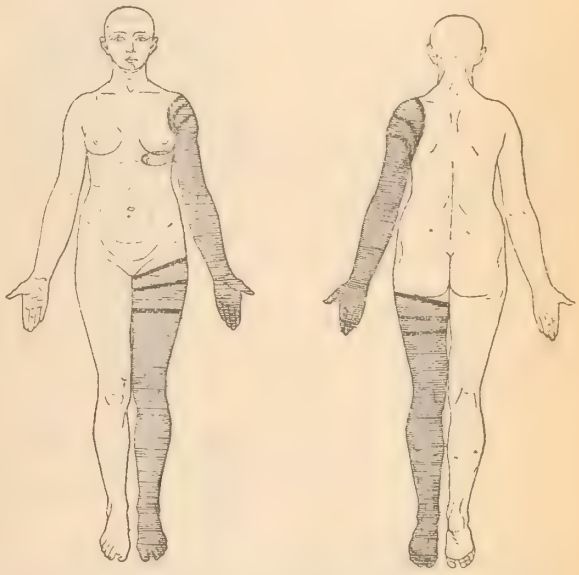
FIGS. 8 and 9.—Case of hysterical paraplegia following a slight traumatism. "Stocking anæsthesia" reaching to the knee. Clean-cut border.

In distribution these affect psychic rather than nervous territories—that is, anæsthesia in hysteria is not limited to the distribution of a certain nerve, or to the area corresponding to certain spinal segments or trunks of a nerve plexus. When of an extremity, it assumes with wonderful uniformity the "glove," "sleeve," or "stocking" type. We occasionally see this distribution spoken of as pathognomonic, but this is a gross error, as it may occur in locomotor ataxia, multiple neuritis, leprosy, and very rarely in



FIGS. 10 and 11.—Hysterical paresis of left arm following an incomplete sleep-palsy. Characteristic "sleeve" form of anæsthesia, with abrupt border and not corresponding to nerve distribution.

syringomyelia and limited lesions of the cerebral cortex. But there is a distinguishing trait that will ordinarily differentiate the one from the other without the aid of other signs. The border of the hysterical anæsthesia is sharply

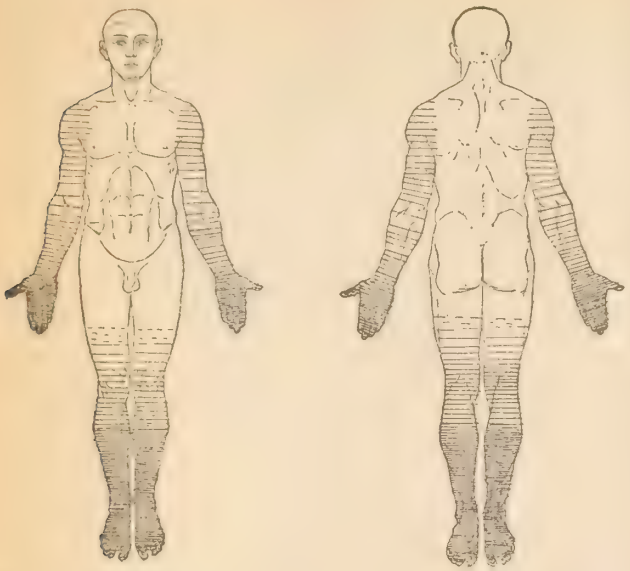


FIGS. 12 and 13.—Hysterical hemiplegia with most exquisite hyperæsthesia. Although the hyperæsthesia was so intense and the limits were sharply marked, the shifting of these limits could be demonstrated during the examination, as indicated by the heavy lines.

defined, while that due to the organic diseases named shades off gradually into the normal. This applies almost equally to hysterical hyperæsthesiæ. It is illustrated by Figs. 5 to 17.

The distribution in a band around the limb is pathog-

nomonic of hysteria. It generally occurs in connection with hysterical joint disease.



Figs. 14 and 15.—Case of severe multiple neuritis. The anæsthesia was marked, gradually diminishing in degree from the extremities of the limbs toward the trunk, where it imperceptibly passed into the normal, but its extent was constant; there was no shifting.

Another peculiar distribution of hysterical anæsthesia is that in disseminated patches and irregular areas, again

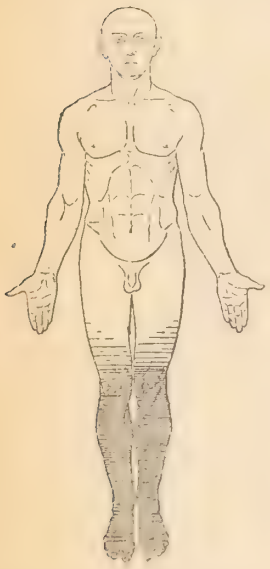


Fig. 16.—Alcoholic neuritis, moderate in degree, of the lower extremities. Approximately a "stocking" anæsthesia, but it shades off gradually into the normal, and the borders, though ill defined, are constant.

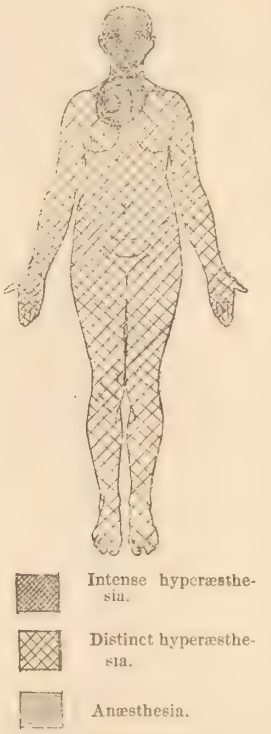
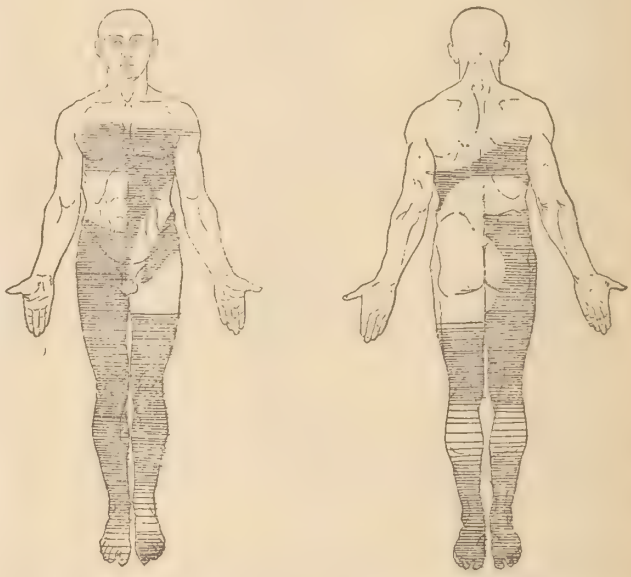


Fig. 17.—Severe hysteria, simulating cerebro-spinal meningitis. Amaurosis. The heavy circular lines are intended to show how the patch of anæsthesia grew during the first examination.

without any relation to the nerve supply. This disseminated arrangement is also occasionally found in tabes (Figs. 18 and 19),* syringomyelia, beri-beri, alcohol and lead poisoning, and perhaps in multiple sclerosis and dementia paralytica. But here again the law of sharp borders holds good, and, furthermore, as in the first-mentioned cases, the hysterical anæsthesia is apt to be much more complete than that due to the organic affections. These patches are, perhaps, most frequent on the forearms and in the mammary and submammary regions, but their location is often determined by the ætiology, or the seat of the concomitant paralysis. Above all, it is to be remembered that they must be sought for. As a rule, the patient is entirely unconscious of their presence until discovered by the examiner, or by himself accidentally. This applies equally to the most extensive and absolute anæsthesia. To discover the patch of anæsthesia indicated in Fig. 17 required a careful and prolonged search.



Figs. 18 and 19.—Case of locomotor ataxia with rather unusual distribution of anæsthesia.

Another peculiarity which I consider of extreme diagnostic importance, but which I have never seen emphasized, is the mobility of the line of demarcation between the anæsthetic and normal surfaces. The variability in extent and intensity of hysterical anæsthesia has long been recognized, and Figs. 1 to 5, taken from a patient kindly referred to me by Dr. E. M. Smith, may serve as an illustration. But I allude now to a shiftiness of the borders that can be demonstrated during the same examination. If the observer start on the normal skin (the patient's eyes, of course, being closed) with the finger, a camel's-hair brush, or a pinhead, in testing for anæsthesia, and a pin point in testing for analgesia, and approach the anæsthetic area in steps of about a quarter to three quarters of an inch every one half to three quarters of a second, he will suddenly reach a point where the object is not felt, or is felt with decidedly less distinctness, according to the degree of sen-

* I examined this case in the service of Professor Gowers at the National Hospital for the Paralyzed and Epileptic, and I am indebted to him for permission to publish it. The borders of the anæsthetic areas were not so sharply defined as indicated in the figures.

sory blunting. This point is then accurately defined and marked. For this a very soft, colored pencil is best. Ink and tincture of iodine are not well adapted for this purpose, because the evaporation may cause a persisting sensation which interferes with the result of the examination. For the same reason a hard pencil is not to be used. An ordinary lead pencil may be employed, if the lead is first rubbed over some rough surface, so that a mark can be made with very slight pressure. In the same way the examination is continued until the border of the anæsthetic (or hyperæsthetic) area is carefully outlined. The examiner's attention is then directed to other regions—the heart, eyes, other extremities, etc.—for a few minutes, the patient in the meantime not being allowed to inspect the outlined boundary, when the same process is repeated. It will then generally be found, if the case is hysterical, that the border has shifted more or less—one half to four inches.

This sign I consider to be pathognomonic of hysteria, or at least of functional disease. It applies to areas of hyperæsthesia as well as to anæsthesia. In Figs. 6, 7, 12, 13, and 17 the heavy lines are designed to indicate not only the rule of this mobility, but that which actually occurred during the examination of each case. In the cases illustrated by Figs. 8, 9, 10, and 11 the sharp border was demonstrated, but the shifting was not especially examined for, and hence is not indicated in the diagrams.

There is another sign which, malingering being excluded, is pathognomonic of hysterical anæsthesia, when it can be elicited. This is getting the patient to designate when the anæsthetic area is touched. The manœuvre requires a little tact, but can, not infrequently, be managed. The patient's eyes being closed, he is told to say "Yes" promptly whenever he is touched. He is first drilled by rapidly touching the normal surfaces a number of times, and then the anæsthetic surface is touched. Asked if he did not feel that, he naturally says "No." The procedure is repeated a number of times; first, the normal, then the anæsthetic, areas being touched, and to the same question he uniformly answers "No." Finally, he is told hurriedly and rather impatiently, "Well, if you don't feel it, say 'No,'" and the process is quickly repeated, when the patient will not rarely say "No" as promptly when the anæsthetic surface is touched as he says "Yes" for the normal parts. Without going into a discussion of how and why, which would be out of place in this paper, I wish emphatically to say that "catching" a patient in this way is not necessarily evidence of simulation. In other words, we make the response automatic.

And here we touch another striking and almost pathognomonic peculiarity of hysterical anæsthesia. It does not ordinarily affect the reflex and automatic actions. A patient will take a pen in a completely anæsthetic hand, adjust it properly, and write. I saw in Jolly's wards in Berlin a man with complete anæsthesia of the entire mucous membrane of the mouth, and yet he had no difficulty in manipulating the bolus of food. I once examined a woman who had absolute anæsthesia and analgesia of the left arm and hand. In dressing after the examination, she tied a ribbon beneath her chin and inserted pins in her clothing with the usual feminine dexterity. Through the kindness of M. Déjerine, I examined, at the Bicêtre, a man who was blind from atrophy of the optic nerves, and had in addition an hysterical anæsthesia of the hands. To pass the time and earn a trifle, he busied himself in knitting nets, which he did with great rapidity and accuracy. These acts are guided, of course, solely* by the sense of touch, and would all be impossible in organic anæsthesia. This will be again alluded to in connection with the ocular symptoms of hysteria.

The degree of anæsthesia may sometimes be diminished by concentrating the patient's attention on some other detail than the intensity of the sensory stimulus while requiring him to indicate each stimulus. For example: The man who furnished Figs. 1 to 5 had, as indicated, a general anæsthesia that was much more pronounced on the left side, but was well marked on the right also. His attention was fixed on the difference by a careful comparison of the two sides. I would prick first one side, then the other, sometimes more severely on the right, sometimes on the left, and ask him which he felt the more distinctly. Gradually I diminished the intensity of the pricks to mere touches, his attention being concentrated all the time on noting the difference, when I found he was recognizing a stimulus probably a sixth or an eighth as intense as that originally required to produce a sensation. This manœuvre is really only a variation of the one just described, and every thoughtful observer of tact will soon hit upon similar devices to suit individual cases.

An old hemianæsthesia, very marked, and stopping sharply at the middle line, is pretty sure to be hysterical, and if the special senses are affected on the same side there is scarcely room for doubt.

Anæsthesia of the trunk which reaches to the middle line in front and not posteriorly is hysterical.

Anæsthesia dolorosa, that is, anæsthesia in an area affected by severe spontaneous pain, means organic disease.

In hysteria we may have dissociation of sensation of all varieties; even analgesia with hyperæsthesia to touch. Figs. 2 and 3 show the dissociation usually found in syringomyelia—that is, loss of pain sense with preservation of that for touch.

Loss of the muscular sense and the sense of fatigue may also be lost in hysteria as well as in locomotor ataxia. About eighty per cent. of hysterical anæsthesias affect the left side.

I wish to mention but briefly the hysterical hyperæsthesiæ. Perhaps the most frequent of these are the tender spots along the spine. They will be found to be inconstant in position exactly as are the borders of the anæsthetic or hyperæsthetic areas, and this is shown in the same way. In this examination care must be exercised not to press too forcibly or too frequently on the painful points. Light pressure or percussion suffices. A rubber-tipped pencil is a convenient implement for the purpose. If the painful impression made is too intense, the sensa-

* This is not strictly true, as sense of position, sense of motion, and sense of resistance are all involved.

tion persists and the mobility of the points can not be demonstrated. Too frequent pressure or percussion defeats the object in the same way. Points tender on pressure are particularly frequent to the left of the spinous processes in the cervico-dorsal, mid dorsal, and dorso-lumbar regions, in the left submammary region, and the so-called ovarian regions. In men, the scrotum or testicle, more usually on the left side, is a frequent seat.

In hysteria we may have a hyperæsthetic zone corresponding to a girdle sensation, with gastric crises, almost exactly as found in some cases of locomotor ataxia, but this hyperæsthetic zone may be at some point hysterogenic. It may be worthy of note that hysterogenic points are sometimes to be found in anæsthetic areas. They are of some practical therapeutic value, for in cases of chronic paralysis, contracture, tremor, and the like, if an hysterical attack can be induced by pressure on one of these points, after the attack has passed the chronic affection will often be found to have disappeared or to be much improved, which may be the first difficult step in a complete cure.

General hyperæsthesia is very rare in hysteria. I have seen one case which was acute and closely imitated cerebro-spinal meningitis (Fig. 17).

Among the hyperæsthesias may be classed hysterical joints, long ago so graphically described by Brodie. These cases are far from rare, and many a patient is confined to bed or limps about with a supposititious "sprain," "chronic rheumatism," "gout," or "flat-foot" which is purely hysterical. Indeed, Brodie * asserted that four fifths of the women of the upper classes, complaining of articular trouble, had an hysterical affection, and Paget has supported this opinion.

The joints most frequently affected are the knee, hip, and ankle, but any articulation may be the seat of this hysterical manifestation. Briquet believed that hysterical arthralgia was never the initial symptom of hysteria, but Charcot showed that it may be the primary manifestation, and I have seen several instances. For the sake of brevity, I shall confine myself to the mention of some of the traits of hysterical coxalgia, as it will serve well as a type of the class. It may present all the prominent symptoms of tubercular hip joint disease: pain, spontaneous and on motion; the same deformity—flexion, adduction, and inward rotation, even to the most extreme degree; fixation of the thigh from muscular rigidity, and pain on percussion over the trochanter. But the hysterical affection is more uniform in its development and progress than is the other. It does not show the free intervals at first and the temporary improvement from use. Although striking forcibly on the sole of the foot or over the trochanter causes pain, it will be found that light percussion with the tip of the finger, quite insufficient to disturb the joint, is also painful, or even slight pinching of the skin or lightest pin-pricks. This superficial hyperæsthesia is one of the distinctive traits of the hysterical joint, but occasionally there is anæsthesia instead. At the knee, ankle, wrist, and elbow, the anæsthesia or hyperæsthesia is prone to take the form of a band about the limb, extending a couple of inches above and below the joint. In the case of the hip joint the area often assumes the shape of a triangle the apex at the root of the scrotum or mons Veneris, the base over the sacrum. But the tenderness on pressure may be found over the coccyx, lumbar spine, pubes, ischium, or entire limb. The pain is more diffuse than in morbus coxarius, affecting the back, loins, and the extremity as a whole, and the muscular contraction is more apt to affect neighboring articulations. In hysterical hip-joint disease, for instance, the ankle and knee may be as rigid as the hip. A very important negative sign of the hysterical affection is that it does not keep the patient awake at night. Children do not awaken with the sudden start and cry that bear the stamp of organic mischief.

The gait may at once betray the character of the case by showing some inconsistency. It is apt to be peculiar and exaggerated in such a way as to demonstrate clearly that it does not spare the joint. Indeed, it may be such as to throw unnatural strain upon it. Or the patient in walking will find it impossible to place the limb in a position that is readily assumed in the recumbent posture, or to perform some movement that he can execute against considerable resistance when sitting or lying down. He sometimes walks with a jerky, jumping motion, or shows some of the characteristics of the hysterical paralytic gait presently to be noted. If the patient is anæsthetized, the order of the reappearance of the symptoms on emerging from the narcosis is peculiar. The muscular rigidity and superficial tenderness return before pain on heavy percussion over the trochanter can be elicited. In organic disease of the joint, the deep tenderness returns first. The external appearance is usually normal, although there may be redness, swelling, œdema, or wasting of the muscles.*

The association of an organic and hysterical joint affection has been observed a number of times.

(*To be continued.*)

* *Lectures Illustrative of Certain Local Nervous Affections*, London, 1837, p. 37.

THE DIAGNOSIS OF MALIGNANT TUMORS OF THE LUNGS.

By I. ADLER, M. D.,

PROFESSOR OF CLINICAL PATHOLOGY AT THE NEW YORK POLYCLINIC; VISITING PHYSICIAN TO THE GERMAN HOSPITAL.

(*Concluded from page 176.*)

Totally different in every respect is the picture offered by a second case:

The subject of this observation was a gentleman, sixty-seven years old, who first consulted me in July, 1893. His previous history does not afford much that is important. Hereditary taint can not be traced. Syphilis as well as abuse of alcohol are strenuously denied. It must be noted, however, that the patient, who is a dealer in tobacco, has for

* Gilles de la Tourette et Dutil. *Nouvelle iconog. de la Salpétrière*, 1889, p. 251.—Ballet. *Soc. méd. des hôpitaux*, June 28, 1889.—Bœckel. *Gaz. méd. de Strasbourg*, 1870.—Charcot. *Lectures on Diseases of the Nervous System*, Sydenham Soc., vol. iii, p. 447.—Babinski. *Arch. de neurol.*, 1886, vol. xii, pp. 1 and 154.

years been addicted to most excessive smoking, averaging sixteen to twenty strong Havana cigars daily. For quite some time, he can not state exactly for how long, he has been troubled with a cough, followed by slight, usually frothy, occasionally somewhat bloody, expectoration, and pain in the chest. This pain is confined to the left upper anterior portion of the thorax, is quite indefinite, dull, and hardly to be localized; at times, however, more acute and severe. Neither deep respiration nor other movements seem to affect the pain in any way. The patient states, furthermore, that he has lost somewhat in weight, at times feels rather weak, but enjoys good health in all respects, and that appetite, sleep, and defecation are perfectly normal. In outward appearance he is a rather stout man, pale, of somewhat livid complexion, and has a slight cyanosis of the lips and visible mucous membranes. Pulse rather rapid and of no great tension, the arteries sclerotic and rigid. On inspection of the chest it is at once apparent that the left upper anterior portion of the thorax is almost entirely inactive in respiration. Percussion of the right lung shows entirely normal conditions, with the exception of a very moderate emphysematous distention of the margin. On the left side there is a full and sonorous percussion note above the clavicle and below it to the lower margin of the first rib. From there downward, merging without interruption into the cardiac dullness, the percussion note is absolutely flat. This dull percussion extends toward the right side for a short distance under the sternum, toward the left to about the anterior axillary line, when it stops abruptly and is bounded by normal lung sound. Over the posterior aspect of the chest, on the left side as well as on the right, percussion is perfectly normal. Auscultation of the right lung shows everywhere normal vesicular respiration, with here and there a mucous râle. The same is true for the left posterior and lateral portions of the chest. Above the left clavicle, and below it down to the upper boundary of dull percussion, hard respiration with numerous mucous and submucous râles. Over the entire area of dullness the respiratory resonance is *diminished* and faint to such a degree as to be just audible. Coincident with this the vocal fremitus is also reduced to a barely appreciable minimum. The heart sounds are audible at the usual places. The systolic sound is rather indistinct and rough, the second aortic sound very strongly accentuated. Further examination shows traces of albumin in the urine, but neither casts nor renal epithelia. The sputum contains neither tubercle bacilli nor elastic fibres. The temperature is normal. Nothing of importance can be detected in any of the other organs.

This peculiar result of examination admits of several interpretations. The assumption of a tubercular process did not seem warranted. Aside from the absence of bacilli in the sputum, the age of the patient, the normal temperature, the perfectly normal condition of the apices, the intense dullness, irregular in outline but bounded so abruptly, the faint and diminished respiration—all these facts opposed tuberculosis. A diagnosis of encapsulated pleuritic effusion seemed more in accord with the facts, though the localization would appear very unusual. The pain, the immobility in respiration, the diminished respiratory and vocal resonance might be considered as pointing in that direction. An exploratory puncture, which brought out merely a few drops of blood and at the same time gave the sensation of the needle being plunged into a firm tissue, conclusively demonstrated the absence of fluid. Two possibilities remained: either a chronic indurative fibrous condition, the consequence, perhaps, of some old chronic or subacute inflammatory process, or a tumor. Further observation was necessary to decide between the two.

After a stay of several months in the mountains, by which the patient declared himself much benefited, he withdrew from further observation, and did not appear again until March, 1894. According to his statement, he had passed a fairly comfortable winter, and had been enabled during all this time to attend to his business. The pain had disappeared, and his principal complaints are now general debility, loss of appetite, an harassing cough that often disturbs his sleep, and shortness of breath. The expectoration, sometimes abundant, sometimes sparse, is either white and frothy or very often, sometimes uninterruptedly for days together, more or less bloody.

On examination, it appeared that the left anterior dullness now extended upward to the clavicle, toward the left further into the axilla, and toward the right to about the centre of the sternum. The heart was not dislocated. The percussion note was totally flat, and over all this area, with the exception of a narrow zone close to the periphery, the respiratory murmur and vocal resonance had entirely disappeared. A slight dullness was also recognized now posteriorly at about the centre of the left scapula, just below the spine, and there also the vocal resonance and respiratory murmur were much diminished. In other respects the status was practically the same as in the year before, with this difference that râles of various kinds were much more abundant. Repeated microscopical investigation of the sputum revealed nothing characteristic.

From this time on all symptoms, both subjective and objective, continued slowly but steadily to increase in intensity. A second sojourn in the mountains during the summer of 1894 brought no relief. At the beginning of November the dullness extended to the right sternal margin and above the clavicle. A network of dilated veins was now visible over the left anterior thorax and the upper sternum. Above the left clavicle several hard glands could be felt. Posteriorly the dullness extended now over nearly the entire upper lobe, and the respiratory resonance was reduced to a minimum. All over the remainder of the lungs, both right and left, abundant large and small râles were audible. There was no fever, the appetite was poor, and the patient, who looked decidedly cachectic, complained of increasing debility and difficulty in breathing on the slightest exertion. The sputum was uninterruptedly bloody, and when not composed of pure blood presented the peculiar prune-juice tint. The hæmorrhages became gradually more frequent and more abundant. At times he would aspirate blood into the right lung during his sleep, thus provoking attacks of suffocation. Nevertheless he was still able to be about the greater part of the day, and on fine days to walk short distances in the open air. During the night of December 4th, while the patient was sleeping soundly, a very copious hæmorrhage set in; the blood was aspirated in considerable quantities into the bronchi, and death from suffocation ensued within a few minutes.

Long before the fatal end the diagnosis of tumor had been made. The slow but uninterrupted extension of the dullness, the hæmorrhagic sputum, the increasing cachexia could be accounted for in no other way. The autopsy, performed by Dr. Schwyzer, confirmed this diagnosis. I will here merely give a few of the more important extracts from the autopsy notes.

Thorax is well developed; costal cartilages in part calcareous, in part ossified. Lungs but slightly retracted. Pericardium covered with a layer of fat about one centimetre and a half thick. The entire pericardium thickened, and contains about sixty cubic centimetres of clear, serous fluid. A

small tumor, of about the size of a small cherry, protrudes with its tip into the pericardial cavity from the posterior external wall of the sac. The heart is proportional to the size of the body and is rather flabby. The epicardium, particularly over the left ventricle, contains abundant fatty deposits. Both auricles and ventricles contain dark liquid blood and some clots. All the valves are normal. The heart muscle is of grayish-brown color and flabby. The coronary arteries are normal. In the arch and descending portion of the aorta are several calcareous patches.

The *right* lung is nearly throughout uniformly emphysematous; at a few points only are there groups of larger emphysematous vesicles (emphysema bullosum). It contains abundance of air, no fluid, and very little blood. On opening the bronchial tubes it is seen that they are filled with clotted blood from the trachea down to the smallest ramifications. The entire pleural cavity of the right side is free from adhesions, contains no fluid, and presents an entirely normal appearance. At the hilus of the right lung are found a number of lymphatic glands, some attaining the size of a walnut, which for the most part appear indurated and slaty. On section, there are evident small, whitish specks of tumor substance in the interstices between the indurated tissue.

The *left* pleural cavity is entirely obliterated. The left lung is of average size and very heavy. To the touch it does not yield the elastic sensation peculiar to lung tissue, but feels rather firm, like liver. In its upper half the upper lobe is entirely consolidated, but not granular on section. The lung is very firmly adherent to the pericardium. Into the pericardial cavity a small tumor, of about the size of a hazelnut, protrudes, which, on section, appears to consist of uniformly white, soft, evidently largely cellular, tissue. The base of this tumor merges diffusely into the lung tissue. The bronchial glands of the left hilum are all enlarged, and consist of masses of slaty indurations interspersed with patches of tumor. The very tip of the left upper lobe still contains a limited quantity of air; the remainder of the lobe is densely infiltrated and indurated, and appears on section of slaty color, interspersed with whitish-yellow tumor masses, thus presenting a peculiar marbleized aspect. The lower half of the upper lobe and the upper portion of the lower lobe are occupied by a cavity about the size of a large orange. The walls of this cavity are very irregular and deeply eroded, and are formed, not of lung tissue, but of whitish, soft, tumor substance. The cavity is filled with clots and loose broken-down tumor material. Several thick and degenerated blood-vessels traverse this cavity. Their lumen is almost entirely obliterated, and they are converted into firm fibrous tumor masses, with only slight indications of a central canal. Several conical stumps of vessels, similarly degenerated, some as thick as an ordinary lead pencil, are also recognized. The anterior wall of the cavity is quite thin, and consists mainly of tumor material and the enormously thickened and infiltrated pleura. At a point corresponding to the fifth intercostal space in the axillary line the wall is so thin that it tears apart as the lung is taken out. The lower portion of the lower lobe contains air. No tumor masses are apparent, but there is uniform bronchopneumonial infiltration. The entire pleura is enormously thickened and infiltrated, likewise portions of the posterior mediastinum, so that the arch and part of the descending portion of the aorta are surrounded by firm and dense fibrous masses, to which they are closely adherent. Enlarged glands are also imbedded therein.

Liver of normal size and brownish-red color, its surface somewhat granular, the acini rather indistinct. On the surface of the liver, and still more numerously on section, are found metastatic deposits about one centimetre in diameter, round, soft, of whitish-yellow color, and sharply contrasted with the surrounding liver tissue.

Several retroperitoneal glands are enlarged and infiltrated. All other organs without sign of tumor and practically normal. I submit to you herewith the specimens and drawings to illustrate them (demonstration). It is evident that we have here a primary tumor of the left lung and pleura.

The case offers much that is interesting from a pathological point of view, and the results of minute investigation will be discussed more fully elsewhere. Let it suffice for the present to mention that the neoplasm is an endothelioma, one of that class of tumors whose position in the system is at present the subject of much discussion, but which perhaps may be classed among the sarcomata, as possibly deriving its origin from mesodermal tissue. It is not improbable that in this instance the endothelioma took its origin primarily from the pleura and only secondarily invaded the lung.

In another case, in all clinical aspects almost identical with the one just described, with the only difference that here the seat of the disturbance was in the right lung, the patient died a few days ago. An autopsy could not be obtained. A totally different clinical picture is presented by those cases in which the pleura is the only or at least the principal seat of the lesion, and in which no very extensive adhesions have been formed. Here the effusion of fluid into the pleural cavity stands prominent among the clinical symptoms and dominates the entire clinical aspect. Numerous cases have already been reported, and I also have had occasion to observe such a case, though I have not been enabled to follow it up to the autopsy. The diagnostic possibilities which the microscopical and chemical analysis of the exudate may afford have already been briefly glanced at. Great stress has been laid upon the diagnostic value of sanguineous pleural effusions. It is, however, well known that bloody exudations are very frequently present in tubercular pleurisy, and, on the other hand, primary pleural cancer is not infrequently accompanied by purely serous fluid. It follows from this that whenever a sanguinolent exudate is present and tuberculosis can be excluded, there is strong ground for suspecting a tumor. A clear serous exudate, however, does not in any way exclude the possibility of tumor. In the case of primary pleural cancer that I have seen, the exudate consisted entirely of a clear, yellow serum.

Hampeln reports an observation in which aspiration permanently removed the exudation in a case of primary pleuro-pulmonary tumor. This is, however, a solitary instance. It can be received as a general rule that the cancerous form of pleuritic effusion is distinguished by its tendency toward continual and rapid recurrence in spite of oft-repeated aspiration, the volume of fluid frequently assuming enormous dimensions. Thus Arnault de la Menardière records a case in which aspiration was resorted to twenty-nine times within six months, and at each aspiration bloody fluid, varying in quantity from one to two litres and a half, was evacuated. In view of such facts it has been seriously doubted whether repeated aspirations should be resorted to under such circumstances, and it has been

asserted in support of this view that the evacuation of such large quantities of bloody fluid, and the opportunity for renewed hæmorrhage into the pleural cavity thereby afforded, can but react injuriously upon the patient. In actual practice, however, the intense sufferings of the patient, and the immediate, even if only temporary, relief afforded, will, no doubt, often compel us to resort to the aspiration in spite of all theoretical objections which may be advanced against it. Besides those already touched upon, it is necessary very briefly to discuss some few other symptoms which may be of diagnostic value. The so-called prune-juice sputum has at one time played a great rôle as pathognomonic for pulmonary cancer, and is still mentioned as such in some of the current text-books. It is established that this peculiar expectoration can occur wherever the blood in certain stages of decomposition is intimately commingled with mucus, as after tubercular hæmorrhages and hæmorrhagic infarctions, and it follows from this that the prune-juice sputum by itself is in no wise pathognomonic of cancer of the lung. Numerous instances have been recorded where there was either no expectoration at all or but very little, and that in no way characteristic. Such an instance is the first case mentioned above. In conjunction with other symptoms pointing in the same direction the prune-juice sputum is nevertheless of some value.

Janssen has described a case of pulmonary sarcoma where the expectorations were as green as grass. The sputum may be purulent, or mucous, or pure blood, and the various forms of expectoration may alternate with each other, as in our second case. Under certain conditions the sputum may assume a putrid, gangrenous character, inasmuch as pulmonary tumors occasionally cause gangrene. Thus Ramdohr has reported a case of sarcoma of the lung, causing pulmonary gangrene. Altogether of rather inferior diagnostic significance is the cough. Probably every case heretofore reported has been more or less associated with coughing. It is, however, important to remember that besides the direct effects of the tumor, such as proliferation of the growth into a large bronchus, compression of the trachea or bronchus, compression of the recurrent nerve, etc., there are present to a considerable extent in every case more indirect effects, such as broncho-pneumonic infiltrations, dilatations of bronchi, bronchial catarrhs, etc. It follows from this that every known form of cough is possible, and examination must determine in each individual case to what degree the cough, considered in connection with the other conditions, can be utilized for the diagnosis.

A symptom of considerable constancy is the dyspnœa. This appears not infrequently among the very earliest symptoms, especially in those cases in which a large bronchus is the primary seat of the lesion. Accordingly, repeated dyspnoic attacks, with absence of physical signs sufficient for their explanation, must always be regarded as suspicious. When, by the increase of the tumor in size, or in consequence of the effusion of great quantities of fluid into the pleural cavity, the available space within the thorax is seriously encroached upon, or when the malignant growths compress the trachea, the nerves, the circulatory organs, it is evident that extreme dyspnœa must result.

Darolles, in his excellent thesis, has already called attention to the fact often observed that in cases of pleuro-pulmonary cancer the evacuation of the effusion from the chest affords either no relief at all or but a very slight and temporary amelioration of the dyspnœa. In the same sense we must interpret the frequently observed disproportion existing between the magnitude of the dyspnoic attack and the rather insignificant amount of fluid that can be evacuated.

The pain is so uncertain and inconstant in the lesions we are considering that little significance can be attributed to it as a means of differential diagnosis. As a curious illustration of this may be mentioned the case reported by Gay, in which a diffuse endothelioma (?) of the left pleura was complicated by very constant and severe pain in the right thorax, a phenomenon which even the autopsy failed to elucidate.

Auscultation and percussion afford manifold serviceable diagnostic points. In cases not complicated by pleuritic effusions, quite irregular and atypical areas of dullness on percussion are frequently met with. The bronchial tubes are almost completely choked or obliterated, and the pulmonary tissue is entirely supplanted by the neoplasm. Under these conditions a more or less extensive territory is totally cut off from all communication with the air-passages and is occupied by tissues entirely devoid of air. If we add to this the infiltrations and adhesions of the surrounding pleura we can readily understand that over such areas we must obtain an absolutely flat percussion note, and that auscultation demonstrates diminished or entirely abolished respiratory and vocal resonance. (Instances of such conditions are the second of the above-described cases, the case of Georgi, and many others.) It is this diminished or abolished vocal and respiratory resonance, accompanied by a flat percussion note over an irregular area, in the absence of all pleuritic effusion, that appears diagnostically significant. It is furthermore important that these areas of dull percussion increase in extent sometimes very slowly, sometimes more rapidly, but certainly and surely. By this unfailing tendency toward extension these lesions can be distinguished from others which may sometimes present similar physical signs. Among these may be mentioned dense pleuritic adhesions and thickenings, fibrous indurations of the lung, splenification, etc. All these conditions may occasionally give rise to auscultatory and percutory symptoms similar to those just mentioned, but these physical signs once established they tend to remain unchanged, thereby differing from the invariably progressive character of the malignant infiltrations.

Béhier attributed a special diagnostic significance to the swelling of the lymphatic glands. Involvement of the supraclavicular glands was associated with tumors, swelling of the submaxillary glands with tuberculosis. Darolles has sufficiently demonstrated the utter unreliability of this distinction. It is, moreover, incontestable that numerous cases of neoplasm have been observed in which enlarged glands could not be detected during life.

In the course of the further development of the tumors under consideration, the bronchial and mediastinal glands

are apt to be involved; the mediastinum and the pericardium may be invaded by cancerous deposits. Where this takes place we may obtain, besides the symptoms due to compression briefly mentioned above, all those symptoms due to mediastinal tumors a discussion and the diagnostic significance of which can not be entered upon here.

Lastly, attention must be paid to those general symptoms which are the common attributes of malignant tumors irrespective of their localization. We are not infrequently in a position to observe advanced cancerous degeneration without apparent cachexia; on the other hand, we see in the very early stages of the disease most decided cachectic symptoms in strong contrast to the rather insignificant anatomical lesions. All the symptoms, therefore, which rank in this group—the debility and marasmus, the emaciation, the anorexia, the psychical depression and irritability, etc.—can claim a merely relative diagnostic value. Symptoms which must be considered cachectic, especially in elderly subjects, must always give rise to the suspicion of malignant tumor, though the localization of the growth may remain obscure. In those cases where objective signs pointing to malignant neoplasm can be made out, the cachectic symptoms often furnish corroborative testimony that should not be underrated as a means of assuring the diagnosis.

In the group of general symptoms we must also class the variations of temperature. Malignant tumors of lung and pleura, if not complicated by inflammatory processes, do not, as a rule, cause fever. In many cases, nevertheless, particularly in the latter stages of the disease, febrile temperatures, usually not very high and quite atypical, have been observed.

Ebstein has established a type of fever, the so-called chronic relapsing fever, as characteristic for certain forms of malignant tumor. I am unable to state whether this may occasionally be of diagnostic value with reference to the pleuro-pulmonary neoplasms.

Thus far we have considered merely the diagnosis, malignant tumor, without reference to the anatomical character of the growth. The question arises, Is it possible to distinguish *intra vitam* the species of tumor, whether carcinoma or sarcoma, etc.? In certain cases this is, no doubt, possible; most assuredly in all those instances where a direct microscopical examination can be obtained. It has been repeatedly observed that, following primary tumor of the lungs and pleura, metastatic deposits have developed in regions—the skin, for example—which permitted the excision and examination of portions of the tumor. Such are the cases where metastatic tumors developed in the punctures after aspiration of pleuritic effusion. Where the direct microscopical examination is impossible we can merely claim a certain amount of probability for the distinction between sarcoma and carcinoma. Schwalbe is of opinion that a rather intense stridorous respiration speaks more for sarcoma, inasmuch as the latter tends to more bulky enlargement of the lymph glands, and therefore to an earlier and closer bronchostenosis than carcinoma. The earlier years of life incline more to sarcoma, the senile period more toward carcinoma.

As a result of our survey, it will be seen that only in rare and exceptional cases can the diagnosis of malignant tumor be reached by means of simple and unmistakable indications. As a rule, it is a shifting and manifoldly varied view that is offered us, and the interpretation of the phenomena is by no means easy. Whenever the direct demonstration of the tumor with the aid of the microscope is impracticable, we must necessarily arrive at a diagnosis by means of laborious and circuitous routes. Those symptoms which from time to time have been brought forward as pathognomonic have been shown to possess only relative value. A close and careful consideration of all anamnestic, clinical, and physical data, a few of the more important of which I have endeavored to review here, will enable us to judge of each individual case and not infrequently to arrive at a correct decision. Unhappily, our decision in the present state of our science conveys no prospect of cure to our patient. The certainty of the diagnosis implies the death warrant of the unfortunate sufferer. Nevertheless, we may entertain the conviction that everything that tends to enhance clearness of vision and purposeful action on the part of the physician must in the end be of service to suffering humanity.

*Bibliography.**

Arnault de la Menardière. Étude clinique sur les manifestations cancéreuses de la plèvre. *Thèse de Paris*, 1874.

Béhier. Leçon sur le cancer du poumon. *Gazette des hôp.*, 1867.

Biggs. Endothelioma of Pleura. *New York Pathological Soc.*, 1891, p. 119.

Boegehold. Hydrops adiposus pleuræ. *Berl. klin. Woch.*, 1878, p. 347.

Barié. Cancer du poumon. *Dict. encyclop. des sciences méd.*, Dechambre and Lereboullet, 1889.

Betschart. Ueber die Diagnose maligner Lungentumoren aus dem Sputum. Virch. *Arch.*, Bd. cxlii, p. 86.

Boström. Das Endothelialcarcinom. *Inaug. Diss.*, Erlangen, 1881.

Chiari. Zur Kenntniss der Bronchialgeschwülste. *Prag. med. Woch.*, 1883, p. 497.

Darolles. Du Cancer pleuro-pulmonaire au point de vue clinique. *Thèse de Paris*, 1877.

Ebstein. Zur Lehre vom Krebs der Bronchien und der Lungen. *Deutsch. med. Woch.*, 1890, No. 42.

Ehrich. Ueber das primäre Bronchial- und Lungen-Carcinom. *Inaug. Diss.*, Marburg, 1891.

Friedländer. Cancroid in einer Lungencaverne. *Fortsch. d. Med.*, 1885, Bd. iii, No. 10.

Fuchs. Beiträge zur Kenntniss der primären Geschwulstbildungen in der Lunge. *Inaug. Diss.*, München.

A. Fränkel. Zur Diagnostik der Brusthöhlen-Geschwülste. *Deutsch. med. Woch.*, 1891, Nos. 50 and 51.

A. Fränkel. Ueber primären Endothelkrebs der Pleura. *Berl. klin. Woch.*, 1892, Nos. 21 and 22.

Gay. A Case of Encephaloid Cancer of the Lungs. *Boston Med. and Surg. Journal*, 1876, vol. xciv.

Georgi. Ein Fall von primärem Lungencarcinom ohne Metastasen. *Berl. klin. Woch.*, 1879, Nos. 28 and 29.

* It is not intended to give an exhaustive list of references. Besides the authors quoted in the text, only the clinically more important monographs are here cited, while the numerous histological and pathological investigations are in the main entirely omitted from the list.

Grünwald. Ein Fall von primärem Pflasterepithelkrebs der Lunge. *Münch. med. Woch.*, 1889, No. 32 and 33.

Hampeln. Ein Fall von primärem Lungen-Pleura Carcinom. *St. Petersburg. med. Woch.*, 1887, No. 17.

Janssen. Ein Fall von Lungensarkom mit grasgrünem Sputum. *Inaug. Diss.*, Berlin, 1879.

Jaccoud. *Leçons de clinique médicale*, etc. Paris, 1869 and 1874.

Japha. Ueber primären Lungenkrebs. *Inaug. Diss.*, Berlin, 1892.

Krönig. Ein Fall von primärem Sarcom der rechten Lunge. *Berl. klin. Woch.*, 1887, No. 51.

MacAldowie. Primary Cancer of the Lungs in a Child Five and a Half Months Old. *Lancet*, 1876, vol. ii, p. 570.

Neelsen. Untersuchungen über den Endothelialkrebs. *Deutsch. Arch. f. klin. Med.*, vol. xxxi, 1882.

Nuscheler. Lungenkrebs bei einem 7jährigen Mädchen. *Schweiz. Corresp. Blatt*, 1875, No. 24.

Pétriaux. Réflexions sur quelques cas des tumeurs de la plèvre. *Thèse de Paris*, 1893.

Puech. *Montpellier médical*, 1888.

Quincke. Ueber fetthaltige Transsudate. *Deutsch. Arch. f. klin. Med.*, Bd. xvi, p. 121.

Quincke. Ueber die geformten Bestandtheile von Transsudaten. *Deutsch. Arch. f. klin. Med.*, Bd. xxx, p. 580.

Ramdohr. Zwei ätiologisch bemerkenswerthe Fälle von Lungengangrän. *Deutsch. med. Woch.*, 1878, p. 78.

Reinhard. Der primäre Lungenkrebs. *Arch. d. Heilk.*, Bd. xix, 1878, p. 369.

Rieder. Zur Diagnose "Neubildung" bei klinisch-microscopischen Untersuchungen von Transsudaten. *Deutsch. Arch. f. klin. Med.*, Bd. liv, p. 544.

R. Schulz. Das Endothelialcarcinom. *Arch. d. Heilk.*, Bd. xvii.

Schwalbe. Zur Lehre von den primären Lungen- und Brustfellgeschwülsten. *Deutsch. med. Woch.*, 1891, No. 45.

Stokes. *Diseases of the Chest.* New Sydenham Soc., London, 1882.

E. Wagner. Das tuberkelähnliche Lymphadenom. *Arch. d. Heilk.*, Bd. xi, 1870.

Wolf. Der primäre Lungenkrebs. *Fortsch. d. Med.*, Bd. xiii, Nos. 18 and 19, 1895.

Unverricht. Beiträge zur klinischen Geschichte der krebsigen Pleuraergüsse. *Zeitsch. f. klin. Med.*, Bd. iv, p. 79.

Woillez. *Dictionnaire de diagnostic médical*, Paris, 1870.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from February 2 to February 8, 1896:*

Owen, William O., Jr., Captain and Assistant Surgeon. The leave of absence granted him on surgeon's certificate of disability is extended one month on account of sickness.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the two weeks ending February 8, 1896:*

Bagg, C. P., Assistant Surgeon. Detached from the U. S. Steamer Vermont and ordered to the Marine Rendezvous, San Francisco, Cal.

Lowndes, C. H. T., Passed Assistant Surgeon. Detached from the Marine Rendezvous, San Francisco, Cal., and granted one month's leave of absence.

ON THE INDICATIONS FOR

THE USE OF ATROPINE IN THE EYES.*

By FRANK VAN FLEET, M. D.

I have in the past few weeks had two patients referred to me by physicians, students in the general class of this school, in both of whom atropine had been used when its administration was uncalled for, and under circumstances in which it might have been productive of great harm. It has occurred to me that it might not be malapropos for us to devote a little time to the consideration of this subject, with which we are all more or less familiar; then, too, we may drop a few remarks which will serve as a guidance to some of the gentlemen who are not specialists, but whose presence shows me that they are interested in this subject. I will narrate these two cases as follows:

Case I.—Mr. P., aged thirty-six years, from Saratoga County, N. Y., was brought to my office by his brother, who is a physician. The patient had always had trouble with his eyes, and as his brother and he were coming to the city they intended to consult an oculist, and, in order to facilitate matters, the brother thought he would instill atropine into the patient's eyes, so that the pupils would be widely dilated and time saved. His intentions were of the best, but not only was the patient subjected to an unnecessary annoyance, the pleasure of his visit to the city interfered with, but he was also exposed to the danger, slight in this instance it is true, of glaucoma.

The examination revealed intermittent convergent squint. Ophthalmometer, right eye, astigmatism, one dioptre, axes 90° — 180+. Left eye, 0·50 dioptre, 90° — 180+. V. = $\frac{20}{100}$, improved to $\frac{20}{20}$ with glasses as above. He was requested to return before leaving the city, which he did two weeks later. Mydriasis from the atropine had disappeared. The ophthalmometric finding was the same, and vision was: Right eye, $\frac{20}{100}$, improved to $\frac{20}{20}$ w. — 1·50 cyl. ax. 90°; left eye, $\frac{20}{100}$, improved to $\frac{20}{20}$ w. — 1 cyl. ax. 90°. Binocular vision was present, and a muscular insufficiency of the externi, esophoria, 6°, and of the vertical muscles, hyperphoria, 10°. The atropine revealed nothing and was useless.

Case II.—A large, plethoric man, aged forty-nine years, had catarrhal conjunctivitis, with some ptosis of right eye. There was no other disease, and the refraction was two dioptres of hypermetropia, with astigmatism. The pupil of one eye was widely dilated from atropine. Here the conditions were different from Case I. This patient had reached an age when glaucoma is more apt to occur; he had the refractive condition which favors glaucoma—hypermetropia—and he had the plethoric, gouty physical condition which also favors it. The atropine did him no good and should not have been used except its indication was urgent (and it was not urgent), and even then after a most careful examination.

Now, when ought one to use atropine?

Atropine is a most valuable agent in ophthalmological practice. It has its indications; it has its contraindications. There are two conditions produced by it which are more or less serious, and which are not uncommon, the first being

* A short talk to the class in ophthalmology at the New York Postgraduate Medical School.

an inflammation of the conjunctiva, the eyelids, and sometimes the integument surrounding—perhaps even the whole face and neck; the second being the condition known as glaucoma. There is still a third condition which may be brought about by the injudicious use of atropine, but this is rare, and only occurs in high degrees of myopia. I refer to dislocation of the lens. Still, rare as it is, it is well to bear it in mind as a possibility when using mydriatics of any kind.

Atropine conjunctivitis may or may not be easy to recognize. Occasionally we find the instillation of one or two drops of a solution of the strength of one fifth of one per cent.—that is, sulphate of atropine, one grain, to water, one ounce—will produce a marked erythema of the face and neck. This generally occurs, when it does happen, in young children, although it has been seen in adults. I have seen a solution of this strength produce elevation of temperature, general erythema, dryness of the throat, and delirium, simulating scarlet fever. As this solution represents perhaps one four hundred and eightieth of a grain of the drug in every two drops, and at most but a very small quantity becomes absorbed, probably by running down the tear passage and so into the stomach, we can see how susceptible some people are to its action. The conjunctivitis occasioned by atropine has been, in my experience, of that character known as catarrhal; it may, however, when its first exhibition is attended with untoward results, be of the purulent variety.

When atropine produces irritation at once, we shall have a history something like this: A patient is presented with some ocular condition requiring the use of atropine, which is to be dropped in the eye three times daily. The next day the patient returns with the eyelids swollen more or less, occasionally a profuse discharge of pus, the ocular conjunctiva injected and swollen, and the eyelids very red and hot. The skin surrounding the eye may appear tawny and inflamed, with perhaps streaks running down from the eye, as if some excoriating, almost caustic, material had left its marks. This is due to the tears running over the face. I have seen such a case looking almost like erysipelas.

This is, of course, very unusual, and yet it happens sufficiently often to have been seen by nearly all who have to deal with ocular cases. The condition generally found is that which follows the prolonged use of the drug, as in strumous keratitis, and especially the interstitial variety; not because of any special tendency or idiosyncrasy, but because of the length of time we have to use it—perhaps two or more years.

Here we find the patient, after having been under our care for a few months, and perhaps slowly improving, will come some day with quite a discharge of pus, which nothing that we can do seems to help. The photophobia, which had been becoming less, again asserts itself; the ciliary injection, which was disappearing, was perhaps entirely gone, becomes complicated or succeeded by a more superficial injection of vessels, which are longer, more tortuous, and larger than we had noticed before, evidently conjunctival. If we evert the lid, we here find the conjunctiva thickened and red. There are heat and itching; the face, perhaps, just below and about the eye, is scaly. Nothing seems to benefit the condition until we stop the atropine, and then these symptoms disappear. With the disappearance of the conjunctival symptoms we may have a reappearance of the primary symptoms of deeper inflammation, the original disease reasserting itself. We have substitutes we can make use of in this class of cases—namely, duboisine, hyoscine, homatropine, cocaine, and scopolamine. These are either too expensive, too prone to produce constitutional symptoms, or else inefficient, with perhaps the exception of the last. I have had very good results follow the use of scopolamine as a substitute for atropine, and in one case of a boy with interstitial keratitis, where atropine was evidently doing mischief, the untoward symptoms ceased as soon as I began to use scopolamine in solution, one fifth of one per cent. Still, scopolamine is on trial, and it is impossible to make positive statements about it. Too much has been alleged for it, and I have heard of bad results following its use, although I have never seen any personally.

The treatment of atropine conjunctivitis is simple. In the first place, stop the atropine, which will generally be all that it is necessary to do. If it should be necessary to do more, soothing washes, a saturated solution of boric acid being the best, with vaseline smeared over the inflamed skin, will often suffice. If there is a tendency to a subacute conjunctivitis persisting, applications of nitrate of silver, sulphate of copper, or simply alum may be resorted to. It is better, however, not to attempt to do too much, because, as the condition is due to irritation, the indications are for rest. The most unfortunate and disastrous result attending the use of atropine is the production of glaucoma.

Glaucoma is a disease of the eye which might occur to anybody; by this I mean that there is no form of eye which can be said to be exempt; but certain eyes are more liable to suffer from it than others.

Age is a factor in the production of this affection, and it is rare to see the disease under forty years. Hypermetropia is another factor, this being the form of eye most often attacked. Astigmatism against the rule is said also to be a predisposing factor, but whether this is cause or effect I have never been able to satisfy myself. There is, however, no condition, shape, or form of the eye which may not have glaucoma. I have lately seen a case of several years' standing, in a man of thirty-five years, in whom the refraction was myopic.

It is not, however, my intention to go into the subject of glaucoma, interesting as it may be, but rather to consider the use of atropine in affections of the eye.

Atropine and all alkaloids of belladonna have the property of dilating the pupil, which property is dependent not alone on its influence through the circulation, but by a direct action on the muscle itself. It is generally used in the strength of two grains to the ounce, which is not, as we so often hear students say, a two-per-cent. solution, which would be about ten grains to the ounce. It is dropped into the eye with a medicine dropper, two or three times daily, according to the indications. It is used in dis-

ease and also in determining the refraction in certain cases, but its use here is very limited.

In the determination of the amount of hypermetropia and hypermetropic astigmatism, atropine or a mydriatic of any kind is seldom necessary. In young people, children especially, where refractive errors have continued uncorrected for a long time, and especially where the eyes have been employed excessively, it may, at times, be good treatment to fully paralyze the accommodation for varying periods in order to enforce absolute rest; these conditions are not common. That such a course of procedure is ever necessary to arrive at a correct diagnosis in these days of advanced knowledge I do not believe. In myopia, and perhaps in some cases of mixed astigmatism, atropine or some substitute may often do good.

You have been told, and have read, that myopia is, as a rule, the result of disease of the interior of the eye, and you also know that the muscle of accommodation has fibres, called the meridional fibres, which extend backward and terminate in the chorioid. Contraction of these fibres draws forward the chorioid, the retina, and, in fact, the whole interior of the eye. In myopia the ciliary muscle is ill developed because of the absence of the necessity for accommodation; yet, small as it is even here, contraction of these fibres has an influence in keeping up an irritation of the tunics of the eye which can not but be detrimental. I believe we can do our myopic patients a service, especially when their eyes are irritable, by occasionally putting them under the influence of atropine and giving them very dark-colored glasses, thereby enforcing rest. This is especially true of young children with high degrees of myopia.

The inflammatory conditions necessitating the use of atropine are confined to the eye itself. It is not indicated in inflammations of the appendages. Conjunctivitis, you may say, is sometimes due to accommodative strain, which is true. But this condition will yield to proper correcting glasses, and therefore mydriatics are unnecessary.

Scleritis and episcleritis will generally yield to appropriate treatment, without mydriasis, also.

In keratitis, atropine is indicated for two reasons: first, it paralyzes accommodation, thereby relieving the cornea from any action the ciliary muscles may indirectly have on it; and second, it acts as an anæsthetic to a limited degree. I have never seen glaucomatous symptoms arise from the use of atropine in keratitis, but conjunctival irritation in this connection is not uncommon.

In iritis atropine is indicated at once, and the sooner the iris is brought fully under its influence the better, and especially is this true of the plastic variety. In serous iritis, without plastic exudation, mydriatics act by dilating the iris, thereby relieving pain. In the plastic variety, not only is this the case, but they also overcome the danger, if used in the onset of the disease, of adhesions being formed between the iris and the anterior capsule of the lens, constituting what is known as posterior synechia. In inflammation of the ciliary body, cyclitis, atropine is indicated as an antiphlogistic and analgetic. In inflammations of the deeper structures of the eye, as in hyalitis, retinitis, chorioiditis, and even hæmorrhage, I believe atropine has a place. There is a difference of opinion here, some holding that the enlargement of the pupil from atropine allows more light to enter the eye than is good for the inflamed structures, which is a fact. But the paralyzing of the accommodation, it seems to me, is beneficial, especially when we can exclude the light by means of very dark glasses. The greatest fear we entertain from the use of atropine, and in fact of all mydriatics, is increase of tension, but this should be a desirable aid in case of hæmorrhage from the retinal vessels. In simple optic neuritis mydriatics are not beneficial.

The contraindications for the use of mydriatics can be inferred from what I have already said, but the greatest fear, and one which even the most experienced feels, is the possibility of precipitating an attack of acute glaucoma.

I saw a patient some years ago, a middle-aged woman, who had received a blow or a number of blows on both eyes, which, from the history and from facts afterward ascertained, had produced simply a contusion. The family physician who treated her thought the proper thing to do was to instill atropine, which was done; this treatment was continued, causing great pain, and when the patient was seen by an ophthalmologist glaucoma was present and the patient was blind.

What are the contraindications? In the first place, never put a mydriatic into any one's eye unless you know exactly why you do it, and are certain, so far as you can judge, that there are no reasons why it should not be done.

In the second place, do not put atropine into the eyes of a patient over forty years of age, whose refraction is hypermetropic, unless you are sure that those conditions which favor glaucoma do not exist: a rheumatic or gouty diathesis; a lack of sensitiveness to the cornea; a shallow anterior chamber; a sluggish pupil; an increase of tension; a cupping of the optic nerve. Any or all of these are contraindications, and yet any or all may exist and a mydriatic may seem to be imperative. We meet with cases in which we use atropine with fear and trembling, but one is not justified in using a remedial agent which may cause blindness unless one knows what to do to counteract its influence, and is prepared at a moment's notice to do it. We can not this morning go into the treatment of glaucoma, but during the session you will without doubt have this subject laid before you. But I should like to impress on you that in dealing with the eyes you are dealing with organs whose loss can not be repaired. If you are a general surgeon, and through error in diagnosis you should deprive a human being of a limb, you can replace it with an artificial one which will be a fairly useful substitute; but if you deprive him of his eyes, you leave him crippled indeed. Artificial eyes can be made to look very beautiful, and for cosmetic effect they answer the purpose, but one can not see with them, and many of us, in fact nearly all, would not hesitate long in choosing between blindness and death. It should be a criminal offense for any person to attempt to treat an eye unless he is competent to examine it in its minutest detail, yea, even to prescribe a glass for presbyopia, unless he has first satisfied himself that the condition of the fundus is such as would warrant him in

doing so. Many an unfortunate has had his or her life shortened by the false sense of security given him by the advice of some charlatan that all he needed was a pair of glasses, and if my talk to you this morning has aroused in even one of you an inkling of the importance of this subject I shall feel that I have not talked in vain.

FOOD *VERSUS* MEDICINE AS A BLOOD-MAKER.

By BRADFORD C. LOVELAND, M. D.,
PHYSICIAN AT THE CLIFTON SPRINGS SANITARIUM.

An article in the *New York Medical Journal* of November 23, 1895, on The Gold Preparations as Alteratives, by Dr. Stucky, and one in the issue of December 7th of the same journal by Dr. S. Wolfe, entitled Ferratin; its Value as a Reconstructive, have prompted some thoughts I would like to record under the title at the head of this article. I wish it understood at the outset that the object of this article is not to criticise Dr. Stucky or Dr. Wolfe or the remedies which formed the subjects of their article referred to above; but, by reporting a few cases of anæmia and chlorosis treated without any of the so-called blood remedies and the lessons those cases will teach, to show what I believe to be the case, that food is the only blood-builder; that the use of *iron*, or *arsenic*, or *gold* can only help in building better blood if they help the assimilation of food. I have read on good authority that the daily ingestion of iron and other mineral ingredients of the blood is greater than the daily excretion of the same substances from the waste of tissue, and that all the remedies that will be needed in cases of the kind, besides the proper regulating of the food, drink, and exercise of the patient, are such things as will correct the evils of digestion which may exist. I can not say that arsenauro will not do all that is alleged for it, as I have not used it much, but I wish to report a few cases of anæmic patients whose recovery has been all that could be desired with no medicines of the class called alteratives or blood-builders:

Case I.—Miss C. M., aged twenty years, came under my care December 6, 1892. Blood examination on that date showed hæmoglobin forty per cent.; red corpuscles, 1,700,000 to the cubic millimetre; color sallow, pale; great weakness and shortness of breath; pulse rapid and feeble; unable to stand but a few moments, and could not walk twenty feet without great dyspnœa; stomach extremely sensitive, bowels constipated; no appetite; had not menstruated in two years. The patient had consumptive parents and had some cough. She said she had taken lots of iron, but I was not satisfied without giving it a trial, and Blaud's pills were given and rejected by the stomach. Then I began to pay all my attention to her digestion, and hoped that with proper food her blood would improve. No medicine was given except nux vomica and an elixir of hydrastis and avena sativa. A diet of meat, milk, eggs, gluten mush, Graham bread, and green vegetables was ordered. Milk to be taken between meals and at bedtime besides her regular meals. The patient was given graduated exercise in her room and afterward in the open air, and the necessity of deep breathing was impressed upon her. On December 29, 1892, blood showed hæmoglobin sixty per cent., red corpuscles 3,120,000, and her improvement in every way corresponded. January 25, 1893, showed an added improvement of twenty per cent. in the blood as well as her general condition, and on February 16th she was allowed to return home, her blood being normal—hæmoglobin ninety-eight per cent., red corpuscles 5,080,000. She had not menstruated yet, but felt well, was free from symptoms of weakness and anæmia, and could walk five or six miles a day.

Case II.—W. R. B. came to me on August 16, 1895, with the statement that he had been given up to die by the best consulting physician at one of our large city hospitals, where he had been under treatment for several months. The diagnosis there was cancer of the stomach and pernicious anæmia. Physical examination showed some tumefaction at the pyloric end of the stomach, considerable emaciation, tongue red and dry. He had an appetite, but all he ate passed through him, so he said, and he had from two to eight copious and very exhausting movements of the bowels daily. Lower extremities numb up to the knees, and upper extremities numb to the elbows. Painful consciousness of heart beats and great dyspnœa. Blood examination: Hæmoglobin, forty-five per cent.; hæmatokrit showed red corpuscles to be twenty-three per cent. of volume of blood, and they counted 2,240,000 to the cubic millimetre. My diagnosis was catarrhal gastritis and enteritis. I prescribed a powder containing five grains each of salol, bismuth subgallate, and bismuth subcarbonate after each meal. Removed all opiates which he had been taking and began feeding him every two hours the whites of two fresh eggs, raw; had tried whole raw eggs with no success. Later I added the yolks boiled hard, and, as he could bear it, meat chopped fine and gluten bread. Improvement was steady until November 21st, when he reached his average weight when in health. Tumefaction has disappeared from the stomach, blood is normal; hæmoglobin, one hundred per cent.; volume of red corpuscles, forty-eight per cent. of blood, and they counted 4,960,000. He can walk a mile or more and eat a good variety of food.

Case III.—July 1, 1895, Mrs. H., aged twenty-seven years, suffering from an acute exacerbation of salpingitis. She had fever, nausea, extreme weakness, and pallor; had suffered for months with catarrhal salpingitis. She was so feeble that a surgeon whom I sent for considered the case unfavorable for operation. Hot douches and injections were used six times a day and she began to improve.

Blood examined on August 7th: Hæmoglobin, fifty-five per cent.; volume of red corpuscles, twenty-one per cent.; count, 3,720,000. Improvement continued, and on September 23d hæmoglobin was one hundred per cent., red corpuscles 5,380,000. Patient returned home free from pain and feeling quite well. No medicine was given from the beginning to the end of this case, except some aconite the first few days when she had fever above 103° F.

I could report more of the same class of cases, but it is not necessary, as I think these are sufficiently characteristic. I have used ferratin carefully and thoroughly in three cases. In the first two I did not examine the blood, the patients being chronic dyspeptics, whose clinical aspects indicated poor nourishment. Other preparations of iron had been used, but were found to disturb the stomach and were discontinued. Ferratin proved less disturbing to the stomach and bowels than the older preparations, but no marked effect was produced in either case. I will report three cases of chlorosis in which I made careful blood examina-

tion, and treated one with ferratin, the two others with no medicine whatever.

Case I.—Miss H. consulted me on August 27, 1895. She was a public-school teacher, thirty-six years old, rather fleshy and pale; menstruation irregular; general weakness, loss of appetite, fissures or cracks at the corners of her mouth, and she was hardly able to keep up her work. Blood examination showed hæmoglobin sixty-five per cent.; red corpuscles, volume twenty-eight per cent. of blood; red corpuscle count, 4,620,000. I ordered ferratin, which she took three times a day until December 6th; also ordered diet of red meats, eggs, milk, and Graham bread, with green vegetables.

December 6th.—Patient said she had followed diet pretty well, but did not like red meat; had taken meat, however, twice a day and a good deal of milk. Had kept up her school duties, menstruated twice in the four months under treatment; said she had a better condition of stomach, and the ferratin did not disturb her in any way. Blood examination: Hæmoglobin, sixty-five per cent.; volume of corpuscles, thirty per cent. of blood; count of red corpuscles, 5,020,000.

Case II.—Miss P., school teacher, thirty-six years old, pale, fleshy, and weak; pain in head and back of neck on any exertion; tongue clear, but pale; feels stupid and sleepy. Blood examination August 7, 1895: Hæmoglobin, fifty-five per cent.; volume of red corpuscles, twenty-five per cent. of blood; count, 4,560,000. The diet prescribed was largely of red meat, fresh eggs raw, and milk. Blood on September 4th showed hæmoglobin, sixty per cent.; volume, twenty-eight per cent.; count, 4,000,000. Felt better and went back to her school. Returned December 26th. Had kept up her diet, except that eggs were scarce and she had to rely on meat and milk. She had continued her work until the holiday vacation, at which time she visited me. Blood showed hæmoglobin, seventy per cent.; volume, thirty-five per cent.; count of red corpuscles, 4,580,000, and she feels much better than in the summer.

Case III.—Mrs. S., November 22, 1895. Blood examination showed hæmoglobin, thirty-five per cent.; volume, eighteen per cent.; count of red corpuscles, 3,980,000, small and irregular. She had great weakness and dyspnœa, and had suffered from chronic catarrh and ulceration of the bowels. The diet prescribed was six to eight raw eggs and two quarts of milk daily, besides a little lean beef.

December 22d.—Hæmoglobin, fifty per cent.; volume of red corpuscles, twenty-five per cent.; count, 3,600,000. Is still on the same diet and shows continued improvement. Had taken iron before coming under my care. The only medicines I have given her are salol and bismuth subgallate for a short time while her bowels were too loose.

I have had other patients improve in like proportion when the diet was suited to the needs of the body, and the exercise and environment properly looked after. I wish to repeat that I do not write this as a criticism either on the gentlemen who wrote the articles referred to above or the remedies that formed the subjects of their articles, but, as I have had opportuniteis of studying the effects of diet with and without medicine in a number of chronic cases of malnutrition, my results may be interesting and perhaps valuable when placed beside the reports in the articles referred to. As the result of my experience, I regard anæmia (except from hæmorrhage) and chlorosis as errors of nutrition, and often resulting in anæmia from improper digestion and absorption, with the presence of more or less fermentation. In chlorosis there may be a nervous element added to the causes. When any medicine—alterative, reconstructive, or any other—does do good, it does it, *not* by being absorbed and becoming a component part of the blood, but by checking fermentation, stimulating digestion or absorption, or stimulating the nervous system. In such case it would in a measure reach the cause of the condition. Hence, if, influenced by some advertisement or report of some very successful case, we expect this or that one remedy is going to give us like success right along in our cases of anæmia and chlorosis, we are doomed to disappointment. We must study our patient, not alone his disease, but find out how he lives, eats, drinks, sleeps, and exercises; study the various physiological functions, especially the digestion, absorption, and excretion. Then, if happily we find where the trouble lies, what the body requires in the way of food, and, if needed, what assistance we may render by medicine toward the assimilation of the needed nutriment, we have a comparatively plain, though not always an easy, road to cure. For it is much easier to prescribe a medicine which has done well for some one else than to go through all the details I have referred to. It should be remembered that all the cases reported here were chronic in character and the patients had been under continuous treatment with various remedies for months before I saw them.

Clifton Springs, N. Y., *January 15, 1896.*

SEPARATION OF THE NASAL CARTILAGES.

WITH REPORT OF A CASE.

By LEWIS S. SOMERS, M. D.,
PHILADELPHIA.

The case herewith reported, although belonging to a class of catarrh extremely common in the practice of all rhinologists, shows what a very great amount of relief can be obtained in a nose already the seat of extensive hypertrophies and further complicated by an accident.

The patient, H. W., an American, a white man, aged thirty-three years, admitted to the clinic of the Union Mission Hospital on August 30, 1895. Ten years ago—that is, in 1885—he had a cavity in an upper incisor tooth filled. Immediately after this operation he noticed a discharge from the mouth, disappearing and recurring at irregular intervals, and this has continued until the present time, the discharge being muco-purulent in character and coming from a sinus in the anterior portion of the hard palate, around and near the tooth that was filled. Three years ago (in 1892) an acute abscess formed at this point, and has discharged almost continuously since. In 1886 he was struck across the bridge of the nose with a shovel and both bones were broken. Since this accident occurred he has had difficulty of nasal respiration, and comes to the clinic solely for this symptom.

On examination, the mouth shows marked rugosity and papillation of the anterior portion of the palate immediately behind the incisor teeth, due to necrosed and hypertrophied tissue from the abscess. The pharynx is the seat of long-standing hypertrophic changes. On the floor of the left nasal cavity and springing from the anterior portion of the sæptum is a large bony exostosis; the turbinals on both sides are congested and enlarged, both inferior and middle pressing

against the septum, leaving but a small space, not exceeding three millimetres in width, for respiratory purposes

He states that the lump in his nose (meaning the exostosis) has occurred within the past two years. Externally the nose shows a slight depression where it was originally broken. On September 20, 1895, he was assaulted and robbed, and the anterior nasal cartilages were separated from the nasal bones on both sides; there was no evidence of fracture, simply a separation sufficient to give rise to crepitation, due to the bones and cartilages when moved grating against each other. The cartilages were pushed toward the left, as the force of the blow doing the damage was directed from the right. Pain is acute when pressure is exercised; otherwise he complains only of a soreness that would naturally occur from the force of a violent blow.

He again reported at the clinic on September 28th, with general condition of nose much improved; pain and crepitation still marked.

October 10th.—Good but yielding union of cartilages to bones; slight movement on pressure; absence of all pain and soreness.

15th.—Cartilages show no crepitation, being firmly bound in position. Discharged cured.

Treatment.—The treatment will necessarily be divided into two periods—before and after separation of the nasal cartilages. On admission to the clinic the nose and pharynx were thoroughly sprayed with "Seiler's solution." A four-per-cent. solution of cocaine was used on cotton to render the large spur on the left side anæsthetic, and it was then removed by the electric trephine. After the slight inflammation due to the use of the trephine had subsided, the enlarged turbinals were cauterized with electricity, leaving free breathing space. Of course, the turbinated bodies were cauterized at intervals, several days intervening between each burning, that the slight amount of inflammation might have time to subside and sufficient contraction at the site of cauterization should occur to allow room to insert the cautery in order to attack the middle turbinal.

No surgical treatment of any nature was used on the separated cartilages, as they had immediately returned to their normal position after the blow on the nose. As far as possible in a septic organ like the nose, a strict antiseptic treatment was maintained, and suppuration at no time occurred during the course of treatment.

It is very evident that the hypertrophic condition both of mucous membrane and of bone, if not already marked, received a decided impetus when the incisor abscess formed, thus setting up a general catarrhal condition of the Schneiderian mucous membrane by contiguity through the anterior maxillary sinus and nasopharynx. The man was especially predisposed to respiratory troubles of the upper air-passages on account of his occupation, being confined to a woolen mill and constantly inhaling large amounts of wool fibres. Generally, in these cases with enlarged turbinals and sæptal exostoses, stimulating medical treatment is used for varying periods of time, but with practically futile results. Occasionally, in mild cases in which the turbinals are not too much enlarged, massage with iodine or tinctura benzoini composita will to a certain extent reduce the hypertrophy, but the improvement is temporary, and results of any value occur in but a small minority of cases, and then only after long and tedious *séances* extending over months and even years.

REMOVAL OF A CARCINOMA MAMMÆ

AFTER TWO INJECTIONS OF PROTONUCLEIN INTO THE MASS OF THE TUMOR.

By JOHANNES MEYER, M. D.,
BROOKLYN.

Miss A. D., the patient, is a native American lady, forty-seven years of age, and up to July, 1894, was never sick in bed. She had a bad fall on the stairs in the summer of 1894, spraining her right knee and arm badly. She does not remember that she hit her right breast, but soon after noticed a lump in it. It began to grow rapidly in the fall of 1894, causing persistent pain, and she consulted me in the first part of January, 1895. I sent her for treatment to Dr. L. S. Pilcher, chief surgeon to the Methodist Episcopal Hospital. She entered the hospital on the 31st of January, 1895, and the next day the tumor was removed by Dr. Warbasse. The patient was discharged sixteen days after the operation. For months after she suffered greatly, especially with her right arm, which was swollen to twice its natural size, was very painful, and could not be lifted. The first time I saw her after the operation was in April, 1895. She had very much declined in health and suffered torture, as she expressed it. I could not find at the time any new outbreak of a cancerous tumor, but the tissues above the scar were quite infiltrated. In May she noticed a new lump in her breast, which was very painful to the touch. She was away from home and did not inform me of it till the end of July, 1895. I sent her again to Dr. Pilcher, who refused to perform a second operation.

We will proceed now with Dr. Pilcher's observations on the case as given to me by himself: When she presented herself the first time on January 19, 1895, there was found a circumscribed elastic swelling in the left upper quarter to the right breast. The breast was tender on pressure; there was no retraction of the nipple and there was no adhesion of the skin. On the 1st of February, 1895, the breast was removed by Dr. Warbasse. On inspection of the tumor, it appeared to be carcinoma, whereupon the contents of the axilla were also removed. Several small glands and nodules were found in the axilla and removed *en masse*. Primary healing followed the operation. The pathological examination by the pathologist of the hospital showed the tumor to be carcinoma. When she presented herself again, August 1, 1895, examination showed a diffuse infiltration of the upper third of the pectoralis major muscle, which was not removed at the time of the operation, and also a large, flat nodule over the cartilage of the third rib. Some enlargement of the cervical glands was probably present, but they were deeply imbedded, owing to the amount of fat in the neck. Dr. Pilcher advised no surgical interference.

I will now briefly describe the treatment which I successfully followed: Before I decided to make a protonuclein injection into the tumor, it was clear to me that to be successful, and to lessen a possible danger from the protonuclein subcutaneously injected, I had to build up her health and to minimize the effect of the dyscrasia. The patient was in a miserable condition, and the tumor so painful that she slept very little. When she breathed deeply she coughed and had some pain. Her appetite was poor, and a sharp, darting pain through the epigastrium several times a day awakened the suspicion that the liver or stomach might be similarly affected. It is needless to state that her whole appearance was that of a person whose days were numbered.

I began with a daily dose of three protonuclein and three Blaud's compound tablets, as manufactured by Killgore, New

York. These tablets contain five grains of Blaud's mass, an eightieth of a grain of corrosive sublimate, a sixtieth of a grain of sulphate of strychnine, and a fiftieth of a grain of arsenous acid.

These two kinds of tablets were alternately taken through the day, and besides an external application of menthol in elastic collodium, painted over the tumor and alongside the painful ribs, were the only medication till I injected the protonuclein. The dose was slowly increased to five protonuclein and five Blaud's tablets daily. After nearly three months' continual treatment her general health had considerably improved, though the tumor had steadily enlarged to the dimensions of a medium-sized apple. During these three months my treatment was supported by a frequent change of air. I sent her several times to a farm of her brother-in-law's on Staten Island, and she returned each time greatly improved.

On October 29, 1895, I made the first, and the next day a second injection with the protonuclein. The injections, twenty drops each time, were made right into the mass of the tumor and were very painful, almost immediately followed by considerable inflammatory swelling of the surrounding tissues, especially after the second injection, so that even breathing became difficult, the pulse rose to 120 and more, and there was slight fever for about two days. Then the symptoms began to abate and the skin to ulcerate over the apex of the tumor. The discharge had the well-known cancerous smell for a few days. Then it assumed the characteristics of pus. Two weeks after the injections the ulcer was of the size of a fifty-cent piece, and one could see the tumor pushing against it with every inspiration. Without causing much pain I succeeded in pulling the tumor out with an ordinary pocket forceps. This procedure gave the tumor, which had the consistence and appearance of half-digested meat, the form of a mass about four inches. A great amount of pus came rushing after it. The abscess pocket, large enough to admit half a roll of Johnson's iodoform gauze cut up in the usual way, and a two-inch fistulous channel which had formed down to the old scar, were completely healed in about a month. The internal medication was continued with a gradually decreasing dose. The patient takes now only three protonuclein tablets daily. There is no sign of a cancerous growth; the glands imbedded in the neck are slightly enlarged still, and somewhat painful when hard pressure is used; but their size and the pain they cause are nothing in comparison to their former condition in August, 1895, which gave such a bad prognosis.

The prognosis is still doubtful, but slightly in the patient's favor. Only time can tell if she is completely cured. But one thing is demonstrated, that one can remove a carcinoma mammæ without using a knife.

The patient is to-day a nurse at the Brooklyn Methodist Episcopal Church Home, Park Place, corner of New York Avenue. She is willing to submit to an examination by any regular practitioner or medical society. Several physicians examined her before and after my treatment. Reed & Carnrick's protonuclein was used.

A Woman proposed as Physician to a Prison.—The *Lancet* says that a petition exclusively signed by women of Cardiff has been sent to the Home Secretary recommending the appointment of a woman when the time arrives for the selection of a successor to the present prison surgeon, who has resigned.

The City Hospital.—Dr. Alfred N. Strouse has been appointed an attending ophthalmologist to the hospital.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. APPLETON & Co.
Edited by FRANK P. FOSTER, M. D.
NEW YORK, SATURDAY, FEBRUARY 15, 1896.

THE OVERLAPPING OF SPECIALTIES.

Ne sutor supra crepidam is a wise saying, but, like most proverbs, it may sometimes be disregarded to the general advantage. Its application in the delimitation of specialties in medicine should not be too strict, as is well exemplified in Dr. Kelsey's clinical lecture on The Relation of Rectal Surgery to Other Specialties, published in this issue of the *Journal*. Specialism itself, even when liberally defined, is to some extent objectionable; it is accepted in large communities, where alone it is practicable, because of certain counterbalancing advantages. Certainly that spirit of rigid specialism which would set up the recto-vaginal sæptum, for example, as a barrier not to be crossed by either the gynæcologist or the rectal surgeon can in no wise be defended. Indeed, it is doubtful if so extreme a view, however it may tickle the laity, is held by any member of the medical profession; nevertheless, it is edifying to have the necessity of the overlapping of specialties so lucidly set forth as it has been done by Dr. Kelsey. The clinical basis, too, is the one proper foundation for such an exposition, showing as it does how disease of a particular organ or area is prone to lead to disease, or at least to prominent manifestations of disease, in adjacent organs or areas or those having intimate nervous connection with the seat of the original trouble.

Dr. Kelsey, however, has dealt only with the relations between rectal surgery and that aspect of gynæcology which often involves abdominal section; but that alone is suggestive enough to call up in the mind of the reflective reader the numerous other like correlations of specialties, and the practical inference can not fail to be drawn that, in order to practise a specialty with justice to one's patients and to one's self, one must have something more than a dim remembrance of such reflex symptoms and their significance as are exemplified by pain in the knee and hip-joint disease—one must recognize, and bear always in mind, that lesions which he may discover or think he discovers in the domain that forms the subject of his own special study are not necessarily all that he has to concern himself about in the task of restoring health. He should continually ask himself what may be wrong in other parts of the patient's organism and be contributing to give rise to the symptoms of which the patient complains, and, if reasonable probability of the existence of such a contributory source of trouble appears, proceed to ascertain what it is and whether or not it is within his power to remedy, or else to settle once for all that the probability is not a reality. Of course there are limitations to what can

be expected of a practitioner in this way; everybody who is not an ophthalmologist, for example (except the neurologists and perhaps the "refracting" opticians), stops short at the eye, knowing how absolutely incompetent he is to examine that organ.

There is nothing new in all this, nothing that well-trained practitioners of medicine have not always recognized; but it needs to be presented now and then to those who are inexperienced. Assuredly it is appreciated by the general practitioner, that real head of the medical profession. If he is of the right kind, he starts in practice, not with the conviction that he "knows it all," but feeling that, however carefully he has been taught, he has still to educate himself. He sees that the first thing for him to do is to acquire the power of perceiving when he is getting into water too deep for him—when, in other words, he should ask for a consultation. When he has ripened he will ask for few consultations, but will always consent to one, unnecessary as he may know it to be, when the specialty-struck patient or his friends suggest it. In short, he is, or ought to be, oftener called in consultation by the specialists than he finds himself inclined to call on them for aid.

MINOR PARAGRAPHS.

THE *MONTREAL MEDICAL JOURNAL.*

We have occasionally mentioned this journal in terms of commendation; it is now our pleasure to speak of its continued improvement. In the January number there is an editorial article on the Montreal General Hospital, illustrated with a general view of the institution and a representation of the interior of the operating room. It seems that the erection of new buildings and the remodeling of old ones during the last five years have made the old hospital one of which our Canadian brethren may justly be proud. The same number of the *Journal* contains the opening installment of the charming Ephemerides contributed by Dr. William Osler, of Baltimore, formerly of Montreal.

THE RÖNTGEN RAYS.

Discoveries continue to be reported as to the properties of the Röntgen rays and as to means of managing them. It is said that a London photographer has found that an ordinary Edison lamp with the filament broken is a convenient substitute for the expensive tube heretofore used, that an Italian has devised an instrument that enables the eye to take cognizance of the rays, that a reflector has been made to condense them, and that some applications have been made of the picture-taking process in surgical practice. So far as the last-mentioned item is concerned, we have not thus far been informed of any important aid in diagnosis rendered by the new rays.

A BOHEMIAN COMPLAINT AGAINST DR. KELLY, OF BALTIMORE.

The *Centralblatt für Gynäkologie* for January 25th allows five pages of its space to Dr. Rubeška, of Prague, in which to set forth his conviction that Dr. Howard A. Kelly, of Baltimore, in his publications concerning ureteric work, has failed to give due credit to Dr. Pawlik. It seems to us that the Bohemian professor has not made out his case, unless, indeed, he means to say that the Baltimore surgeon should never presume to address the profession on this subject without repeating an expression of indebtedness to Dr. Pawlik. In short, it looks as if Dr. Rubeška were making a mountain out of a molehill.

THE HEBREW SHELTERING GUARDIAN ORPHANAGE.

It is very much to be regretted that a condition of affairs has arisen in this institution that has led to the resignation of most of the members of its medical staff and to charges of mismanagement having been brought by one of the gentlemen who have resigned, Dr. William M. Leszynsky, to the effect that failure to isolate children suffering with various forms of infectious disease, although it was insisted upon by the physicians, has caused a greatly increased prevalence of those diseases among the inmates and in one or two instances such a calamity as the loss of an eye; and, in addition, that the directions of one of the physicians as to the treatment of the children were peremptorily overruled by the chief officer of the governing board. It is not our intention to prejudge the case, which we learn is to be duly investigated, but we can not forego the remark that a gentleman of Dr. Leszynsky's standing is not likely to have made such charges unless they were warranted by the facts.

ITEMS, ETC

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending February 11, 1896:

DISEASES.	Week ending Feb. 4.		Week ending Feb. 11.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	4	2	9	3
Scarlet fever	130	6	155	12
Cerebro-spinal meningitis	4	1	1	1
Measles	414	29	413	30
Diphtheria	307	48	294	42
Small-pox	0	0	1	0
Tuberculosis	97	122	65	92

The Question of "Preliminaries" in the State Examination.—A committee of the State board of medical examiners representing the Medical Society of the State of New York will be held this (Saturday) afternoon, at 3 o'clock, in parlor F of the Fifth Avenue Hotel, in New York, to hear arguments on the question of dividing the examination, so that students may, before the completion of their undergraduate course, take examinations in certain subjects the study of which is usually completed early in the course. Persons who wish to speak before the committee should notify Dr. M. J. Lewi, of No. 78 West Eighty-second Street. It is announced that the committee will receive and consider written statements that may be sent.

Society Meetings for the Coming Week:

Monday, *February 17th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Hartford, Conn., Medical Society; Chicago Medical Society; Cleveland Society of the Medical Sciences.

Tuesday, *February 18th:* New York Academy of Medicine (Section in General Medicine); New York Obstetrical Society (private); Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Chemung (quarterly), Kings, Livingston (quarterly), and Westchester (White Plains), N. Y.; Baltimore Academy of Medicine.

WEDNESDAY, *February 19th:* Medico-legal Society, New York; Northwestern Medical and Surgical Society of New York private); New Jersey Academy of Medicine (Newark).

THURSDAY, *February 20th:* New York Academy of Medicine; Brooklyn Surgical Society; New Bedford, Mass., Society for Medical Improvement (private).

FRIDAY, *February 21st:* New York Academy of Medicine (Section in Orthopædic Surgery); Brooklyn Medical Society; Baltimore Clinical Society; Chicago Gynæcological Society.

SATURDAY, *February 22d:* New York Medical and Surgical Society (private).

Births, Marriages, and Deaths

Married.

BUCKLER—STEVENSON.—In New York, on Wednesday, February 5th, Dr. Thomas H. Buckler, of Baltimore, and Miss Marion Stevenson.

Died.

BEASLEY.—In Huntsville, Ala., on Tuesday, February 4th, Dr. James A. Beasley, in the seventieth year of his age.

CARRINGTON.—In New Orleans, on Thursday, February 6th, Dr. Paul J. Carrington, aged sixty-eight years.

GEUTEBRUCK.—In Houston, Texas, on Tuesday, February 4th, Dr. Francis D. Geutebruck.

HODGES.—In Boston, on Sunday, February 9th, Dr. Richard M. Hodges, aged seventy years.

KENYON.—In Providence, R. I., on Friday, February 7th, Emily M. Kenyon, wife of Dr. George H. Kenyon.

NEWS.—In Newport, R. I., on Friday, February 7th, Dr. Annie News.

WIGGANS.—In Newburgh, N. Y., on Monday, February 10th, Dr. Lewis Y. Wiggans, aged seventy years.

Proceedings of Societies.

SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL.

Meeting of December 4, 1895.

The President, Dr. PARKER SYMS, in the Chair.

(*Continued from page 187.*)

Observations of Antitoxine in Diphtheria.—Dr. JOHN WINTERS BRANNAN read a paper with this title in which he said that during the present year he had had the opportunity of observing an extensive and thorough trial of antitoxic serum in the treatment of diphtheria, and he had thought that a brief account of his observations might be of interest to the members of this society. All of the cases had been seen in the service of one institution, the Willard Parker Hospital of New York; the conditions, therefore, had been the same in all. The series of cases was so large that it should aid us in arriving at a fair estimate of the value of diphtheria antitoxine, as well as of its limitations, when used in hospital practice.

The systematic use of antitoxine had been begun in the Willard Parker Hospital at the commencement of the present year, though the serum employed during the month of January had been, unfortunately, not strong enough to give the best results. Previous to this year dependence had been placed upon the local and constitutional treatment which had been in general use elsewhere before the introduction of antitoxine, and the results obtained had compared very favorably with those in hospital practice in other cities of this country and Europe.

All the patients, on their entrance had their throats irrigated with normal salt solution, and this irrigation was repeated every two hours or even every hour, until the nares were free from discharge or obstruction and the pharynx clear of membrane. Poultices were employed for the relief of glandular enlargement, and steam inhalations and calomel fumigations were in constant requisition to combat the onset of stenosis of the larynx. When these latter measures proved unavailing, intubation was resorted to and in a few instances tracheotomy.

The general treatment consisted mainly of the administration of the tincture of the chloride of iron in large and frequent doses. Other tonics were used to meet special indications. Stimulants were not employed as a matter of routine, but, when needed, were given freely, particularly in septic cases.

Under the treatment thus briefly outlined, the mortality had ranged from thirty to thirty-eight per cent., varying somewhat with the season of the year and the character of different epidemics.

The antitoxine treatment, as he had said, dated from the beginning of the present year. From the 1st of January, 1895, to the 1st of October, 1895, there had been admitted to the hospital 593 patients with diphtheria. All of them, with the exception of some ten or twelve, had been given antitoxine on the day of entrance into the hospital. The local and general treatment of former years had not been entirely abandoned, but it had become of secondary consequence.

The irrigation was repeated from time to time until all membrane had disappeared. Calomel sublimation was still employed, but with much less frequency. The tincture of the chloride of iron was no longer given at all. Patients received iron, but in smaller doses, and only when it was especially indicated. Intubation and tracheotomy were still required to relieve stenosis of the larynx, but a larger proportion of laryngeal cases ended in recovery without operative interference than under former methods of treatment.

Of the 593 patients under consideration, 438 had recovered and 155 had died, a mortality of 26·14 per cent. During the same period of nine months in 1894, 469 patients had been treated in the hospital, of whom 304 had recovered and 165 had died, a mortality of 35·18 per cent., nine per cent. greater than that for the present year.

TABLE I.

Mortality in Willard Parker Hospital during the First Nine Months of 1895, and in the Corresponding Period of 1894.

	1895.			1894.		
	Cases.	Deaths.	Percentage.	Cases.	Deaths.	Percentage.
First quarter.....	156	52	33·33	147	53	36·05
Second "	256	75	29·29	214	83	38·78
Third "	181	28	15·47	108	29	26·85
Total.....	593	155	26·14	469	165	35·18

By referring to Table I, it would be seen that the reduction in mortality under the serum treatment had begun in the first quarter of the year and had become more and more marked as the year progressed. These improved results were

probably due to the greater strength of the serum employed as well as the more efficient doses during the later months, the natural consequence of longer experience in its administration.

The simple statement that antitoxine lowered the death-rate in diphtheria did not enlighten us very much as to its exact value in different forms and stages of the disease. He had therefore analyzed the cases so that we could study them from various standpoints. It was maintained that antitoxine acted as a specific in diphtheria when given on the first or second day of the disease, its value diminishing rapidly after the third day. The critics of the new treatment, on the other hand, asserted that the older methods were also capable of controlling the disease if applied at its very beginning.

Table II would show how far these respective statements held good in the experience of the Willard Parker Hospital.

Table II.

Deaths according to Day of Disease upon which Treatment was Begun.

Day upon which Treatment was Begun.	1895. Cases.	1895. Mortality per-centage.		1894. Cases.	1894. Mortality per-centage.	
First day	108	10·09		43	26·67	
Second day	130	25·19		120	33·61	
Third "	116	34·19		111	35·40	
Fourth "	87	31·82	33·8	74	35·53	35·9
Over 4 days	152	36·64	355	121	36·29	306
Total	593	26·14		469	35·18	

According to this table 108 patients had been given antitoxine on the first day of the disease and 10·09 per cent. had died. In 1894, in the preantitoxine period, there had been 43 cases which had come under treatment on the first day and the mortality had been 26·67 per cent., two and a half times as great as in the cases treated with antitoxine. On comparing the two groups of patients who had not received treatment until the second day of the disease, we again noted a difference in favor of antitoxine. Here, however, the difference ended abruptly, the average death-rate in all cases treated after the second day being only two per cent. less in 1895 than in 1894. This table, then, though far from supporting the contention that antitoxine was a specific in diphtheria, apparently proved conclusively that the new treatment, when applied early in the disease, gave much better results than the older methods.

Table III.

Causes of Death.

	1895. Totals.	1895. Percentage.	1894. Totals.	1894. Percentage.
Broncho-pneumonia	66	53·22	24	16·90
Laryngeal stenosis	17	13·71	44	30·99
Sepsis	13	10·48	46	32·39
Heart failure	11	8·87	12	8·45
Pulmonary œdema	6	4·84	4	2·82
Paralysis	4	3·23	6	4·23
Nephritis	3	2·42	1	0·70
Bronchitis	2	1·61	2	1·41
Pulmonary gangrene	1	0·81	2	1·41
Meningitis	1	0·81	1	0·70
Totals	124	100·00	142	100·00

Note.—This table only included the cases which had proved fatal in the Willard Parker Hospital. A number of persons in each year had had symptoms of other infectious diseases, such as scarlet fever, measles, or varicella, and had been transferred to the Riverside Hospital on North Brother Island.

It had been apparent to all those in attendance at the hospital during the present year that fewer patients had presented the symptoms of sepsis than in former years, and that, on the other hand, a much larger proportion had had broncho-pneumonia at some period during their stay in the wards. With a view to elucidating these points, he had prepared Table III, which gave the causes of death in 1894 and 1895, with the number of deaths from each cause and the percentage mortality from such cause in each year.

A case of diphtheria progressing to a fatal termination presented so many symptoms and complications that it might be very difficult to decide as to the determining cause of death. The foregoing table, however, had been compiled from the records of the hospital, which were based upon careful clinical study of each individual case, often supplemented by post-mortem examination.

The great mortality from broncho-pneumonia during the present year was the most striking feature of the table, over one half the deaths being attributed to this complication of diphtheria, whereas only one patient in six had died of this cause in 1894.

On the other hand, laryngeal stenosis and sepsis, which together had caused sixty-three per cent. of the mortality last year, had proved fatal in less than twenty-five per cent. of the cases since the introduction of antitoxine. As he had already said, it had been noticed how few of the patients this year had had sepsis, while patient after patient had shown the signs of broncho-pneumonia, particularly when apparently convalescent from the diphtheritic process. This late development of broncho-pneumonia had been one of the most disappointing features of their experience with antitoxine. Patients would be relieved of stenotic symptoms, either with or without intubation, only to die two, three, or even four weeks later of pulmonary complications. It should be said, however, that most of the deaths from broncho-pneumonia had occurred in operative cases, and that there had been considerably more such cases this year than in 1894. An unusually large proportion of the patients entering the hospital had had laryngeal symptoms on their entrance. Some of these had been apparently relieved by antitoxine, and of those who still required operative interference a larger proportion had recovered from the immediate effects of the operation than in former years. Could these patients have been protected from the later invasion of the streptococcus, the number of recoveries after intubation would have been very large.

The following table would show what difference, if any, there had been in the duration of the hospital treatment of fatal cases of broncho-pneumonia, laryngeal stenosis, and sepsis in 1895 and 1894:

Table IV.

Duration of Hospital Treatment of Fatal Cases of Broncho pneumonia, Laryngeal Stenosis, and Sepsis.

	1895.	1894.
Broncho-pneumonia	13·7 days.	2 days.
Laryngeal stenosis	3·0 "	2 "
Sepsis	3·0 "	2 "

According to the table, sepsis and laryngeal stenosis, when unrelieved, had proved rapidly fatal in both years. The figures for broncho-pneumonia, however, were widely different in the two years. The two weeks' length of treatment in the hospital of fatal cases in 1895 illustrated the late development of the disease to which he had referred.

The speaker had already intimated that, in his opinion,

the great reduction in the mortality from laryngeal stenosis had been due in part to the administration of antitoxine, but he was in doubt as to whether or not the even greater falling off in the deaths from sepsis was to be credited to the same cause. It was the impression of Dr. Somerset, the resident physician, that very few patients with septic diphtheria had entered the hospital during the present year. He had himself noticed in his visits to the wards the rarity of the hopeless hæmorrhagic cases which had been seen so frequently in preceding years. It would require a careful study of the records to determine whether the lessened mortality from sepsis since the introduction of antitoxine was of any therapeutic significance.

The remaining causes of death in Table III showed a close correspondence in the two years, and called for no remark.

He had hoped to be able to present the exact comparative death-rate for 1894 and 1895 of laryngeal cases, both with and without operation, but he should have to be satisfied for the present with the statement that the total mortality for intubated and tracheotomized patients in the present year was sixty-eight per cent., as compared with eighty-five per cent. in 1894. He believed that the laryngeal cases which had escaped operation showed an even greater reduction in the death-rate over that for the previous year.

No study of the value of antitoxine in diphtheria would be complete without careful consideration of the age of the patients under treatment. Children under two years of age usually died in spite of all efforts, whereas older children and adults would often get well without any treatment whatever. He had therefore classified the patients according to age, with the percentage of mortality for 1895 and 1894:

TABLE V.

Mortality according to Ages of Patients.

	1895.		1894.	
	Cases.	Mortality.	Cases.	Mortality.
		Per cent.		Per cent.
Under 2 years	101	70·59	89	67·02
2 to 4 years	129	41·54	116	46·28
4 to 6 "	101	19·61	87	36·96
6 to 8 "	66	14·93	54	23·73
8 to 10 "	30	3·23	31	11·11
10 to 12 years	24	4·00	12	7·14
12 to 14 "	28	....	6	....
14 to 16 years	19	....	4	....
Above 16 "	95	6·00	70	4·00
Total	593	26·14	469	35·18

Table V indicated a lowering of the death-rate by the serum treatment in cases of persons between two and twelve years of age. This accorded with the published experience of other hospitals. The unfavorable showing for antitoxine in cases of persons over sixteen years of age was also in agreement with the observations abroad.

The increased percentage of deaths this year among patients under two years of age was, however, surprising and contrary to experience elsewhere. It was true that a large proportion of these patients came under treatment at an advanced stage of the disease. Many also were laryngeal cases which required intubation or tracheotomy, and further analysis would probably show that broncho-pneumonia played a large part in determining the fatal issue.*

These statistical tables demonstrated fairly, he thought, that diphtheria antitoxine had considerable therapeutic value, even in hospital practice, an admittedly poor field for a demonstration of its curative action. The same tables also pointed out the limitations of the new remedy to which he had referred in the beginning of his paper. A reduction of nine per cent. in the mortality of diphtheria, or a saving of nine more lives in every hundred patients, was indeed a great gain, but a death-rate of twenty-six per cent. still remained to combat the contention that antitoxine was a specific in the disease. The chief reason, to his mind, why the experience of the Willard Parker Hospital was not more favorable was that the patients entered the hospital at such an advanced stage of the disease. We had seen in Table II that only 108 of the total number of 593 patients had come under treatment on the first day of the disease. It was his own belief that the great majority of them had been ill for two, three, or even more days when they had been brought to the hospital. The clinical signs in the throat and the general condition had been sufficient evidence of this in many cases. The testimony of parents of the class from which these patients came was but little to be depended upon. Whatever good results had been seen from the serum treatment had been accomplished in the face of very great difficulties, and he was confident that in private practice among intelligent people the specific character of diphtheria antitoxine would be demonstrated. Welch in his recent paper had collected the reports of 663 cases in private practice with 46 deaths, a percentage of only 6·9, almost twenty per cent. less than the mortality of our 593 hospital cases.

In writing this paper he had proposed to limit himself in the main to simply presenting and arranging the clinical data furnished by hospital records from which every one might draw his own conclusions. In observing a large number of cases of a single disease, all subjected to the same method of treatment, one usually formed a more or less decided opinion, or at least impression, of the value of that treatment. In the present instance, however, he said that he must admit that he was as yet unable to range himself either among the enthusiastic advocates of diphtheria antitoxine or with those who unqualifiedly condemned it. Perhaps if he touched upon some of the clinical features of diphtheria as modified by the administration of antitoxine in the Willard Parker Hospital, the reasons for his position might become apparent.

Among the favorable results said to follow upon the injection of antitoxine serum were: A prompt improvement in the general condition of the patient, a strengthening of the action of the heart, a fall of the temperature, a rapid disappearance or "melting away" of the membrane in the throat, and marked relief of laryngeal stenosis. He had already said that he believed that antitoxine often had a favorable effect on the laryngeal symptoms, and he was inclined to think that this was especially true of intubated patients, who seemed to do better under antitoxine than without. On the other hand, he had failed to note any effect, favorable or other, upon either the pulse or the temperature, nor had he seen any "melting away" of the membrane which was not also observed in the

* Since writing the foregoing he had made further investigation with the following results: Sixty-eight of the one hundred and one patients had been sick three days or mor according to the parents, and the average duration of illness of the whole number previous to entrance into the hospital had been between four and five days.

Over two thirds (exactly seventy-two) of the cases had presented laryngeal symptoms which had necessitated operation in the case of fifty-seven. The mortality of the seventy-two laryngeal cases had been 79·2 per cent.; of the laryngeal cases, 51·7 per cent.

Broncho-pneumonia had been the cause of death in thirty-nine cases, in all but eight of which an operation had been performed.

cases of those who had not received antitoxine. There was a case now in the wards in which the membrane had persisted for three weeks, although antitoxine had been given on the third day of the disease.

The general condition had also usually remained unaffected, except as it might be influenced by the relief of laryngeal stenosis already referred to.

Now, as to the alleged untoward effects of antitoxine. It had been said to cause a nephritis, or at least albuminuria; to favor post-diphtheritic paralysis; to dissolve the red cells of the blood, and to set up septicæmia in some manner as yet unexplained. In regard to all these clinical phenomena, he could only say that he had failed to observe them, though he had looked for them day by day, particularly during the past eight months. Cases had shown albuminuria, as in previous years, and, in the opinion of one of the resident staff, rather oftener than formerly; but casts or other evidence of nephritis had been absent. Suppression of urine had occurred, but not with unusual frequency. With the exception of simple regurgitation due to temporary paresis of the palatal muscles, he would say that post-diphtheritic paralysis had been noteworthy by its absence during the present year. With regard to the destruction of the red cells of the blood, or the occurrence of septicæmia, he had seen nothing which would lead him to attribute either of these morbid processes to the administration of antitoxine rather than to the diphtheritic poison itself. Among the hundreds of cases treated this year in the hospital, there was but one in which, in his opinion, antitoxine might have contributed to the fatal termination. In the case in question, a severe one at the outset, a synovial inflammation had developed in several joints some ten days after the injection of the serum, coincidently with an urticarial eruption covering the legs and trunk. The fluid in the joint had become purulent, and the signs of broncho-pneumonia had been found in the lungs. After a protracted illness the child had died, and on autopsy, in addition to the pus in the joints and the pulmonary consolidation, there had been found marked fatty degeneration of the heart and kidneys. This patient would probably have died from the other complications, but we could not but associate the joint process with the giving of the antitoxine.

Before closing, the speaker wished to say a few words on the secondary streptococcus infection in diphtheria, with special reference to the probability that we should in the near future be in possession of a streptococcus antitoxine. We had seen how large a proportion of our patients died of broncho-pneumonia, a complication not due to the Loeffler bacillus, but to a distinct micro-organism—the streptococcus. Could we have successfully antagonized this secondary infection, half of our deaths could have been avoided. This possibility had appealed to him this last year with special force whenever he saw the pulmonary complication develop in convalescents, who perhaps were on the point of being sent home as well. He had often longed for a recovery hospital so to speak, to which they might be sent to convalesce free from the infection which must be present in the neighborhood of active cases of diphtheria, especially cases of operation. But even this transfer might not save them; for it was the opinion of Welch that the streptococci which were present in the normal throat were capable of setting up the pulmonary process in an individual already weakened by the effects of the Loeffler bacillus. It was therefore most satisfactory to note the progress that had been made in the production of a streptococcus antitoxine. It had long been believed that there were several varieties of streptococci, each of which was capable of producing distinct pathological effects. It was now maintained, however, by T. J. Bokenham, the late research scholar to the British Medical Association, that streptococci observed in connection with different pathological conditions were not botanically distinct from each other. If the culture conditions were changed, the characters of the microbes became altered in many cases. By using for several successive generations the living tissues of rabbits, Bokenham had first obtained erysipelas, then later on pus production, and still later a general infection, very virulent in character, but with no evidence of either erysipelas or pus production. If the series were sufficiently prolonged, the streptococci became of such virulence that a fraction of a drop of the blood of an animal killed by them would set up an infection running a fatal course in a few hours. At the same time the cultural characteristics had become so changed that a bouillon culture of the microbe no longer resembled one of the original cultures. The differences observed between streptococci obtained from different sources were not specific in character, according to Bokenham; they were accidental rather than inherent in the micro-organisms themselves. Therefore Bokenham was convinced that for the preparation of a streptococcus antitoxine on the same lines as that of diphtheria, the source of the microbe was immaterial; the only necessity was that its virulence should be as great as possible. Unfortunately the streptococcus rapidly lost its virulence in the ordinary culture media. After long experimentation, Bokenham had finally found a satisfactory medium in a mixture of bouillon and asses' serum. He stated that he had already succeeded in partially immunizing an ass so that its serum had some protective power. Similar experiments were being carried on in France and in Germany, and there was good ground for hope that we should soon have an antistreptococcous serum to supplement the antidiphtheritic serum in the treatment of diphtheria and its secondary complications.

Dr. H. M. Biggs spoke first of the cases which had been treated by the health board inspectors in the tenement houses. Arrangements had been very early made, he said, for the administration of the antitoxine serum by the inspectors of the department upon request of the attending physician. These requests, of course, had come mostly from those practising among the poorest classes in the tenements, and for cases especially severe and often long neglected. Between five hundred and six hundred of these had been treated with a mortality of nineteen or twenty per cent. A very considerable proportion of these patients had been moribund at the time of the administration of the antitoxine. In twenty-two of the cases, owing to the desperate condition of the patients, the antitoxine had been administered under protest, and no effect had been produced by the serum. Excluding these cases, the percentage of deaths had been fifteen or sixteen. It had seemed to him from the beginning that among the mass of practitioners far too little emphasis had been placed upon the time, and too little distinction had been made between the cases treated at the beginning of the disease and those treated later. As was well known, diphtheria was, under most conditions, a rapidly progressive disease; the toxæmia produced was very rapid, patients not infrequently dying at the end of forty-eight hours. Experimental work on animals had shown the same rapid effects. In testing diphtheria toxines it had been found that even very minute doses often produced death in from thirty to thirty-six hours. In almost all these cases pathological examinations had shown even at a very early period extensive degenerations in the parenchymatous organs and in the nerve structures. Dr. Sidney Martin, in a very careful paper, had laid particular emphasis on the

pathological changes occurring in nerve tissue, which he considered pathognomonic of the action of the diphtheria toxine. He had laid particular emphasis on the statement that where the animals did not die after the administration of small doses, these pathological changes in the nerve tissues would be found, although there had been no symptoms referable to such conditions observed during life.

It was, of course, perfectly evident that any substance which acted in an antidotal way could be of but little value after the injury to the tissues had been done; as a matter of fact, in a large percentage of cases of diphtheria the injury had been done before the end of the third day. The administration of the serum after that time, as all the statistics had shown, had had comparatively little influence. The reduction of mortality in cases treated after the third day was comparatively insignificant. The reader of the paper had pointed out that the cases in the hospital had not usually been seen until the third or fourth day. Ordinarily there was considerable unavoidable delay in getting a patient to the Willard Parker Hospital. He was seen first by the private physician, then reported to the department, then seen by an inspector, then by a diagnostician, and finally was sent to the hospital. The patients reaching the hospital on the first day were only those that had been attacked after one or more previous cases had existed in the same family, or those very rare persons who came directly to the hospital for treatment. We could practically exclude from consideration all those cases treated after the third day.

Regarding the value of antitoxine, it seemed to him that the strongest evidence, up to quite recently, had been afforded not so much from clinical observation, as from the results of experimental work. There had not been, almost from the very beginning, a pathologist of repute who had not accepted, provisionally if not wholly, the conclusions as to the specific curative value of this remedy. It seemed very difficult to him to understand how a scientific man could study the experimental work that had been done regarding diphtheria and the production of diphtheria antitoxine and not arrive at the conclusion that it had a specific curative influence. It was not a measure in which the burden of proof was to show that it was of value in the treatment of disease; the burden of proof in this instance was on the other side—the clinician must prove that it was not of value, and that there were some conditions or some new factors prevailing in human beings affected with diphtheria which prevented them from reacting to the antitoxine as was the case in animals experimentally infected.

He was at a loss to understand why there had been so many more deaths in the Willard Parker Hospital from broncho-pneumonia during the past year than had occurred in the European hospitals or in private practice. The large excess of mortality here as compared with that in Europe was due to broncho-pneumonia, and it had occurred chiefly in the hospitals. It had not occurred, so far as he had been able to determine, in the tenement houses or in private practice.

The evidence regarding the value of antitoxine might be summed up as follows:

1. The experimental evidence as to its value, which was complete and conclusive.

2. The evidence derived from the modification of the symptoms in individual cases where the remedy had been administered at an early period of the disease. To convince a physician of the value of diphtheria antitoxine he would only ask that he should see what appeared to be a severe case of uncomplicated diphtheria treated with a sufficient dose of antitoxine in the first few hours of the disease. The marked transformation produced was unlike anything that he had seen from other treatment; at times it had seemed to him almost miraculous.

3. The evidence from statistical studies in hospital and private practice. This had been already sufficiently published. In many instances the mortality had been diminished to one third; in the Paris hospitals the mortality had been reduced recently to eight per cent.; in the large cities of Germany it was from twelve to seventeen per cent., as compared with thirty-five and fifty-eight per cent. under previous conditions.

4. The evidence of its value from its influence on the absolute mortality and the percentage of deaths in large cities. The antitoxine had been more extensively employed in Paris than in any other city of the world. The announcement by Roux had been considered one for national congratulation, and large appropriations and subscriptions had been made for the carrying out of this treatment. The use of antitoxine had immediately become almost universal. The *absolute mortality* in Paris had been reduced to less than one third of the lowest mortality recorded in any one of the previous seven years. The lowest mortality during this period had been 1,266, and the highest mortality about 2,000. For the year ending October 1, 1895, the total mortality from diphtheria and croup for the city of Paris had been only 389. The lowest mortality for any month in Paris during the previous seven years had been 53; the lowest mortality since the adoption of the antitoxine treatment had been 16. The highest mortality for any month previously had been 189; the highest mortality for any month since the introduction of antitoxine had been 50. These results had been reproduced to a greater or lesser extent in Berlin, London, and New York.

5. The specific value of antitoxine could be shown by reasoning by analogy from its preventive action. The health department had used the antitoxine serum for immunizing purposes on about 1,000 children. It had been employed in several large institutions for children in which the disease had been prevailing in an epidemic form. Out of these 1,000 children, 3 had been attacked with croup within twenty-four hours, and all had recovered; 3 had had mild pharyngeal diphtheria within thirty days; 12 had had diphtheria in periods varying from thirty to sixty days after the immunization. In the period of thirty days preceding the immunization in these same groups of children about 150 cases of diphtheria had occurred. In one institution 19 cases had broken out in the fifteen days preceding the immunization and none afterward. In the New York Infant Asylum 108 cases had occurred in the one hundred and seven days preceding the immunization, and one case in the thirty days following the immunization. This had been the experience in other institutions and in private families. About 275 persons had been immunized in the tenement houses, and in a large percentage of these the individuals had been young children and had not been isolated. Of these 275, two had had croup within twenty-four hours and one mild pharyngeal diphtheria within thirty days. The speaker said that the evidence of the protective influence of antitoxine was, to his mind, conclusive. It would protect from diphtheria for a period of thirty days, beginning twenty-four hours after the injection. His own feeling about antitoxine remained exactly the same as it had been over eighteen months before, when he had first become familiar with its use in Berlin.

Dr. C. G. Coakley said it was not his intention to speak upon the therapeutic value of antitoxine, for his experience in its use had been limited as compared with that of the previous speakers. We had all read reports of the great reduction in the mortality of diphtheria since the introduction

of this remedy, and it was his purpose to call attention to several causes which had tended to reduce the mortality, independently of the use of antitoxine:

1. Since the discovery of the Klebs-Loeffler bacillus our interest in diphtheria and our study of it had been greatly enhanced. Physicians and laymen had been alert in watching for "sore throat," and consequently cases had been seen at an earlier date than formerly. In no other disease was the early treatment accompanied by better results, so far as averting the very dangerous complications was concerned.

2. During the last two years there had been afforded to physicians in this city, and subsequently in many other cities, the opportunity of having bacteriological examinations made from the exudate in any form of sore throat. Physicians had been surprised to find that cases that they had hitherto from clinical observation called amygdalitis, should have been classed as diphtheria. The clinical symptoms of such cases, however, had not been those of diphtheria, and the patients had invariably recovered. The addition of such cases—and according to his observations they had not been few—to the class of true diphtheria cases had greatly swelled the number of cases, and at the same time had reduced the rate of mortality.

Undoubtedly many cases of true amygdalitis had been called diphtheria by physicians, from the similarity in appearance to other cases which, after bacteriological examination, had been pronounced diphtheria.

In support of this view, the speaker said that, while in Vienna and Berlin the past summer, he had seen the very best observers diagnosticate cases having the clinical appearances of lacunar amygdalitis as diphtheria, and send the patients into the diphtheria ward without any bacteriological examination having been made. In the *Annual Report of the Boston Board of Health for 1894*, partially accounting for the increase in cases and lower death-rate in diphtheria, was the following statement (page 42): "Another agent has been found in the bacteriological laboratory by which a large number of mild cases of this disease are found to exist."

As to the bacteriological examination itself, it should be remarked that there were two varieties of bacilli—the Klebs-Loeffler bacillus, which was very virulent to guinea-pigs, and the pseudo-diphtheritic bacillus, which was non-virulent to these animals, and was very similar in growth and microscopical appearance to the former. It was not always easy to distinguish between them. The French school and their adherents maintained that it was not necessary to distinguish between these bacilli, as either might be converted into the other and produce diphtheria. The majority of the German school and their adherents thought the pseudo-diphtheria bacillus a separate, distinct variety from the Klebs-Loeffler bacillus, that they were not interchangeable, and that diphtheria was produced only by the Klebs-Loeffler bacillus. The pseudo-diphtheria bacillus was frequently found in amygdalitis, in the sore throat of measles, and often in apparently healthy throats. If, then, it was found in healthy throats, what was to prevent its accidental accompaniment of an amygdalitis? It was evident that from a bacteriological examination alone one with a healthy throat might be thought to have diphtheria. From the foregoing considerations, were we justified in totally ignoring the clinical side, and relying entirely upon the bacteriologist for our diagnosis of diphtheria?

The speaker then referred to a statistical table presented by President Wilson, of the New York City Board of Health, to the mayor. It showed that there had been a gradual increase in the number of cases in the Willard Parker Hospital in 1893, 1894, and 1895, and that there had been about two hundred more cases there this year than last. The mortality rate in 1895 had not been so good as in 1892, or before the use of antitoxine. Although the mortality rate in this hospital had been much lower in previous years than in the city at large, this table showed that in 1895 the mortality rate from diphtheria in the hospital had been twenty-two, whereas that in the city outside of the hospital had fallen to nineteen. The only explanation of this would seem to be that since the introduction of antitoxine a great many children suffering from light and trifling attacks had been treated and reported as suffering from actual diphtheria. They had recovered, as they would have done without antitoxine, and in this way the remedy had been given credit which it did not deserve.

Dr. J. E. Winters said: Personally I feel very thankful to the reader of the paper for the very careful and elaborate report that he has presented. I can not see, however, from this report how anything can be gathered favorable to the antitoxine treatment of diphtheria. After discussing the first report of the Willard Parker Hospital on the antitoxine treatment of diphtheria, eight months ago, I decided not to have anything further to say until I had had a very extended experience; but the careful report presented to-night being upon cases which have been largely observed by me makes it incumbent upon me to participate in this discussion.

When the antitoxine treatment was first brought before the medical world we were told that the recovery of those coming under treatment on the first day of the disease would be one hundred per cent.; the report to-night shows that the mortality in this class of cases has been ten per cent. Numerous observers in all parts of the world have reported deaths from the antitoxine treatment of diphtheria where this treatment was begun on the first day of the disease. We were told at the beginning of this treatment that where treatment was begun on the second day of the disease ninety-seven per cent. would recover, yet to-night we learn that the mortality in the Willard Parker Hospital was twenty-five per cent. among those treated on the second day of the disease. We were told at the outset of this treatment that sepsis would disappear from the features of diphtheria, but to-night we are told that it has been the cause of death in 10·5 per cent. of the fatal cases. At the beginning of this treatment we were told that the pulse of diphtheria was made stronger, and that cases of heart failure would not be seen, yet the tables presented to-night show that heart failure as a cause of death has been rather more frequent than before the antitoxine treatment, and this corresponds with the experience of many accurate observers in Europe. In fact, it has been stated by numerous observers that where the antitoxine is used in diphtheria there is in many cases a weakening of the heart's action, and that more patients die of heart failure now than before the introduction of the antitoxine treatment. We were told at the beginning that it controlled the temperature of the disease, yet it is stated at the present time by all observers that antitoxine has no influence whatever on the temperature of diphtheria, and it is pretty generally stated that the temperature is increased by the use of antitoxine. We were told in the beginning that after the injection of the antitoxine the local process ceased to extend, that there was a rapid and early disappearance of the membrane, that the throat would be free from local evidence of the disease in every case in four or five days or less. This position has been entirely abandoned by all observers. In the Willard Parker Hospital at the present time there is a child who was admitted on November 11th with diphtheria involving both tonsils and

the pillars of the fauces. Twenty-two days have now elapsed since the beginning of the treatment and membrane is still present. A woman was admitted on November 23d who was two days sick on admission. Her throat was free from membrane for the first time on December 2d, ten days after coming under treatment. In April last it was decided by some authority unknown to me that adults should decide for themselves whether or not they should have the antitoxine treatment in the Willard Parker Hospital. A number elected not to have this treatment, and this gave an excellent opportunity for a comparative study as to the effect of the antitoxine on the local process. This was studied with great care. The cases not treated with antitoxine have certainly done fully as well, as far as the local process has gone, as those treated with the antitoxine; in fact, I feel sure that the local process has done far better in those not treated with the antitoxine, and the ultimate recovery has been much better than in those treated with the antitoxine. Of this there can be no question. Recurrence of exudate is far commoner in the cases treated with antitoxine, and it is a very persistent exudate. We were told at the beginning that the glandular enlargement rapidly disappeared under the antitoxine treatment; but, as this is dependent on the local process, and this is affected by the antitoxine, the glandular swelling is not influenced by the treatment. We were told that other manifestations, complications, and sequelæ of the disease, which were the result of the toxine, would disappear. Thus, it was said that the kidney complication would no longer be observed, yet it is now known that this complication is far more frequent than before the introduction of antitoxine. We were told that the post-diphtherial paralysis would no longer be seen, yet Dr. Goodall, of London, one of the first men in England who have written in favor of the antitoxine treatment, has stated that in his cases paralysis occurred in 2·4 per cent. more of the cases than before the antitoxine treatment. Heubner, of Berlin, in his last report, states that in the cases treated by him in which 1,110 immunizing units had been given, post-diphtherial paralysis occurred in 7·5 per. cent.; whereas, in cases in which 1,700 immunizing units were given, post-diphtherial paralysis occurred in twelve per cent. of the cases. The larger the dose, the worse the result. According to this report it is very fortunate that the patients at the Willard Parker Hospital had weaker antitoxine at the beginning of the year than they had later on, as stated by the reader of the paper.

The present position of the advocates of antitoxine is that it reduces the mortality in laryngeal cases; that is about the only contention made for it at the present time here or elsewhere. The mortality in laryngeal cases requiring an operation in the Willard Parker Hospital is stated to-night to be sixty-eight per cent., and in the previous year eighty-five per cent., but the records of the hospital a few years later back might show a much lower percentage. But it is not possible to give out the exact mortality in the operation cases in the year 1894, owing to incompleteness of histories. In this year there were admitted to the Willard Parker Hospital in October forty-six cases; only forty-five histories are to be found. In November seventy-two cases were admitted, yet there are only sixty-four histories; and in December sixty-two cases were admitted and only fifty-three histories are available. It is therefore impossible to give the exact results of the operative cases in the year 1894, because of the imperfect histories.

Cassell, a strong advocate of the antitoxine treatment, reports a mortality of sixty-one per cent. of tracheotomized patients under the antitoxine treatment. The mortality in the operative cases in the Northwestern Hospital in London in 1892 was 56·9, and 56·4 in 1893—better than Cassell's results with antitoxine. Kohts, of Strassburg, reports the best results of antitoxine treatment in operative cases. His mortality in tracheotomy cases was 29·7; but he states that in 1891 in his tracheotomy cases his mortality was but twenty-five per cent., a difference of 4·7 in favor of non-antitoxine treatment. The type of laryngeal diphtheria varies. In some epidemics almost every laryngeal case ends in recovery; in others, almost every case is fatal. For instance, it was stated to me by Dr. Palm, of Ulm, that for several years he had not had a recovery from tracheotomy in laryngeal diphtheria, but for several years past there had been over fifty per cent. of recoveries in these cases. Dr. Palm's nephew further told me that out of thirty cases of laryngeal diphtheria in which tracheotomy had been performed by him while an interne at the hospital in Turin, almost every patient had recovered, while in another epidemic in about an equal number of cases almost every one had proved fatal. In connection with the death-rate of laryngeal cases under treatment in the Willard Parker Hospital, I desire to call attention to a written statement by Dr. P. H. Ernst, visiting physician to the southern district of the Demilt Dispensary. This report states that since April 28, 1895, Dr. Ernst has attended thirty-two cases of diphtheria, in all of which the clinical diagnosis has been confirmed by the bacteriological reports of the Health Department. Among these thirty-two cases there were nine cases of intubation; seven of the nine patients recovered—a mortality of only 22·2 per cent. in operative cases. Antitoxine was not used in any of the cases, as Dr. Ernst states that his experience with antitoxine leads him to believe that it is not only useless but injurious. It was stated at the outset, and has been repeated here to-night, that antitoxine, to be of any benefit in diphtheria, must be used before the third day of the disease. Laryngeal diphtheria is confessedly a late development. It is hardly ever a primary affection and occurs almost invariably in cases in which the onset is so mild as to be overlooked during the first day or two of the disease. Croup is often the first symptom to call the attention of the parents to the child's illness. If antitoxine, to be efficacious, must be used at the outset of diphtheria, why should it be indicated in laryngeal diphtheria? Again, in laryngeal diphtheria there is hardly any toxæmia, yet antitoxine is administered as an antidote to the toxine. Why should antitoxine be administered in laryngeal diphtheria? Again, it has been stated by the reader of the paper that antitoxine does not cause a "melting away" of the membrane, and if it does not do this in the parts that are visible, why should it arrest the local process when limited to the larynx? Or, if it has any influence in arresting the laryngeal process, why should this local process extend to the trachea and bronchi, as it so frequently does in the antitoxine-treated cases? Antitoxine is supposed to have some unexplained, occult influence in cases of laryngeal diphtheria. The time will come when the advocates of the antitoxine treatment will have to abandon their position with reference to its influence in laryngeal diphtheria, as they have already abandoned all other allegations made for it.

The report presented here to-night shows that the death-rate among 101 cases in children under two years of age treated with antitoxine was between seventy and seventy-one per cent.; whereas the death-rate among 89 cases treated without antitoxine was sixty-seven per cent.—that is, the death-rate is nearly four per cent. higher under antitoxine treatment at the very time of life when the disease is most dangerous. But to make this difference more emphatic, I will ask you to bear in mind that during the nine months of 1895 there were brought to the hospital 101 patients under two years of age

and in 1894 only 89, and this at a time when there was far less diphtheria in the city and of a much milder type. These children were watched by me constantly during both years, and those admitted in 1895 not only had a disease of a milder type, but many of them had no evidence of diphtheria except as was shown by the bacteriological report. Under any circumstances is there any possible explanation of the higher death-rate in 1895 in children under two years of age, if they were treated with a specific for diphtheria? In Dr. P. H. Ernst's thirty-two cases of diphtheria, fourteen patients were from sixteen months to four years old; ten were from four to seven years; eight were from seven to fourteen. Among the thirty-two there were four deaths; two of the four were intubated —one a child of sixteen months, one of two years and three months. His mortality in the thirty-two cases was 12·5 per cent. without antitoxine. Contrast this with the report recently made by Professor J. Lewis Smith before the Academy of Medicine of thirty-one cases of diphtheria in the New York Foundling Asylum treated with antitoxine. Among these thirty-one there were seventeen deaths, nearly fifty-five per cent.

When the first report on the antitoxine treatment was made at Budapest by Roux he cited three hundred cases with seventy-eight deaths—a mortality of twenty-six per cent.; but it was soon discovered that this was above the normal death-rate in many parts of the world, and now reports come to us from various continental hospitals of a death-rate varying from twelve to twenty per cent. But do these figures prove anything definitely for the antitoxine treatment of diphtheria? To prove anything they must show a lower death-rate than can be shown to result without antitoxine. In the Children's Hospital in Basel the mortality from diphtheria in 1876 was 34·1 per cent.; in 1886, 6·2 per cent. Had antitoxine been used in the hospital in Basel in 1886 and not in 1876, physicians would have felt that the enormous lowering of the death-rate in this hospital was due to the action of a specific. But why have the reports from the French and German hospitals so moved the medical world for the antitoxine treatment of diphtheria? Because the advocates of this treatment have ingeniously compared the lowest death-rate of the present period with the highest death-rate of the past. They have not told the whole truth. A recent report in the *Deutsche medicinische Wochenschrift*, No. 32, reported 562 cases treated in Berlin with antitoxine; the death-rate was 15·1 per cent.; whereas out of 282 cases treated without antitoxine the death-rate was 17·4 per cent., an almost identical death-rate. In 5,833 cases treated with serum in and out of Berlin there was a mortality of 9·6 per cent., and in 4,479 without serum a mortality of 14·7 per cent., a difference of only five per cent. Later reports may reverse these figures. In the *Berliner klinische Wochenschrift*, 6,626 cases were reported treated with antitoxine, with a mortality in hospitals of twenty per cent., and in private practice of nine per cent., both higher than in Basel without antitoxine. In fact, in Basel the death-rate in 4,479 cases, extending over a period of seventeen years, was but 12·6 per cent.

But from what we have been told to-night, why should we discuss the death-rate of diphtheria from a clinical standpoint? Whether there is a death-rate of five per cent. or fifty per cent. under the antitoxine treatment, antitoxine remains, according to laboratory results, a specific, and we must therefore accept the dictum of the pathologist and the laboratory worker. This is the scientific view of the antitoxine treatment of diphtheria. It has been stated to-night that the mortality from diphtheria in every city of the world where antitoxine is used is steadily declining and has been much reduced, yet the London *Lancet* for October 26th states that "the condition of London in the matter of diphtheria prevalence is growing from bad to worse, and to-day the actual mortality from that disease in the metropolis is more than forty per cent. in excess of the corrected average for the fortieth week of the last decennial period." In the *Lancet* for November 2d it is stated that "in the Edmonton district there has been a state of panic on account of the disastrous outbreak of diphtheria in the Waltham Parish." The *Lancet* of November 9th states: "The condition of the metropolis as regards diphtheria is even worse than was reported last week. There were seventy-two deaths from this disease, being thirty-four in excess of the coreected decennial average." Antitoxine is used just as carefully and just as universally in London as in Berlin, Paris, or other continental cities. Every patient in all the hospitals of the Metropolitan Asylums Board is injected with antitoxine, and yet the death-rate is steadily increasing and is over forty per cent. in excess of the average for the last ten years.

But it is not the statistical side of this subject which interests me most; my chief interest is of a more serious nature. Eight months ago I stated before the Academy of Medicine that the antitoxine treatment of diphtheria was in some cases attended by the most disastrous results. These statements were based entirely upon clinical observation. Experiments since made upon animals, and microscopical studies of the blood in cases of diphtheria treated with antitoxine, have confirmed the clinical observations made by me. In a series of most careful examinations of the blood before and after the use of antitoxine, carried on by Dr. James Ewing in the Willard Parker Hospital, it was found that the antitoxine caused a diminution of the red blood-corpuscles and extensive changes in the leucocytes. Dr. Ewing's conclusions, as stated in his article, are that the changes in the blood as a result of the antitoxine treatment are likely to lead to obstructions to capillary circulation, to changes in the kidneys, to necrotic foci in the liver, to pneumonic areas in the lungs, to obstructions to the cerebral circulation, and possibly to convulsions. At the April meeting of the academy I stated that the pneumonia of the antitoxine cases of diphtheria differed totally from the pneumonia we were in the habit of seeing in diphtheria, that it was a totally different disease from that seen before in the course of diphtheria. It occurred as a sequela and not as a complication. The report presented to-night of the results of the antitoxine treatment for nine months in the Willard Parker Hospital shows that pneumonia was a cause of death in over fifty-three per cent. of the fatal cases, whereas before the antitoxine treatment of diphtheria pneumonia was a cause of death in only sixteen per cent. of the fatal cases. All conditions in the hospital are precisely the same in 1895 as they were in 1894, with the exception of the addition of the antitoxine treatment. The enormous increase of pneumonia as a cause of death in the Willard Parker Hospital during the nine months of the antitoxine treatment has no other explanation than hypodermic injection of these large doses of serum-albumin. These pneumonias are explained by the microscopical studies of the blood by Dr. Ewing in the antitoxine cases. They are, as I stated in April last, septic pneumonias. Clinically, they have the stamp of a septic process, plus the disseminated pneumonia which so frequently accompanies septic processes. The physical signs of these pneumonias, as well as the symptoms, are totally different from those of the ordinary broncho-pneumonia. These pneumonias develop only after two or three weeks of the antitoxine treatment, and the temperature is remarkable in its fluctuations and in being very high some time during the

twenty-four hours. Examination of the lungs gives the physical signs of a disseminated pneumonia. In some of these cases the symptoms subside; the child is apparently on the road to recovery, but again the same symptoms and physical signs develop. There may be two or three such attacks before the case terminates fatally.

One of the most cogent reasons against the antitoxine treatment of diphtheria is the attitude of those who are living in hospitals and watching its results, who formerly were earnest advocates of the treatment, and who, after a large experience, have from conviction become opposed to it. Dr. Cortheron, a London graduate who afterward studied in Paris under Roux, and subsequently took charge of a diphtheria hospital in London, a most earnest and enthusiastic advocate of the antitoxine treatment, after watching its effects for a few months went to the medical superintendent and asked if they were obliged to continue injecting the antitoxine, saying that it certainly did no good, the children died just the same. Dr. Grant, an Edinburgh student who studied in Paris under Roux and subsequently took charge of a diphtheria hospital in London, his teaching and association having made him a most enthusiastic advocate of antitoxine, told me that his experience with it had convinced him of its uselessness and of its injuriousness in certain directions. In Philadelphia, Dr. William M. Welch, of the Municipal Hospital, who has injected over three hundred patients, stated to me on Sunday last that if he were left to act independently and from his own convictions he would never inject another patient. Dr. Bemis, who was for three years in the Municipal Hospital before the introduction of the antitoxine treatment, and who had a great predilection for antitoxine at the outset of the treatment, after eight months of its use became opposed to it. Dr. Warmuth and Dr. Tyler, of the Municipal Hospital in Philadelphia, who were believers in it, are now opposed to it. Dr. Steinsieck, of North Brother Island Hospital, New York, stated to me yesterday that he had never seen antitoxine do the least good in any case in the Island Hospital; that one child who had been sent to him from the Willard Parker Hospital he was sure had died from the effects of the antitoxine. One child whom he injected was dangerously ill from the effects of the antitoxine for several weeks, but finally made a sufficient recovery to be sent home, but he believed it would always suffer from a nervous affection which was the outcome of the treatment. Dr. Bradly and Dr. Farrell, of the North Brother Island Hospital, who were once believers in the antitoxine, are now opposed to it. At the Willard Parker Hospital Dr. Bryant, of Boston, once most enthusiastic for antitoxine, is now opposed to it. Dr. Hardin, of Washington, came to the Willard Parker Hospital firm in his belief in the value of antitoxine. After five months' service he has become most decidedly opposed to it. Dr. Levy, of Richmond, Va., came to the Willard Parker Hospital a thorough believer in antitoxine. After watching its effects in this hospital he is opposed to it. Dr. Levy is at the present time seriously ill with diphtheria, and was offered antitoxine for the treatment of his diphtheria and refused it. Dr. Warmuth, of the Municipal Hospital in Philadelphia, had diphtheria in September and refused to have antitoxine used on himself. Dr. Welch, of Philadelphia, in answer to the question, said he would not have antitoxine used on himself if he had diphtheria, and that if his children had diphtheria of any type he would not allow them to be injected with antitoxine. Dr. Steinsieck, of North Brother Island, says he would not have antitoxine used on himself; that recently he has thought it all over as to what he would do in case his children had diphtheria, and that he has decided he would not have them injected with antitoxine, no matter how severe or what the form of the disease might be. In view of this evidence from physicians who have lived day and night for months with diphtheria patients under the antitoxine treatment, can you, gentlemen, take the responsibility of using antitoxine on your patients?

I think we owe a vote of thanks to Dr. Brannan for his very careful, very impartial, and very valuable paper. No such painstaking, valuable paper on the literature of antitoxine can be found in any part of the world. I therefore move that the society tender him a vote of thanks. (Seconded and carried unanimously.)

Dr. W. H. Park said that, as others had taken up the clinical side so fully, he would only take up a few topics not yet touched upon, and this mostly from the experimental standpoint. From the very beginning there had been no contention made by its advocates that antitoxine would cure all cases of diphtheria; indeed, Behring's first report of the use of serum weak in antitoxine had shown only a very slight reduction of mortality in favor of the new treatment. The degree to which the person had been already infected by diphtheria decided the amount of usefulness of the antitoxine treatment rather than the exact day of the disease. Experiments upon animals had abundantly proved that in them, at least, no amount of antitoxine would avail to rescue those already nearly dead from diphtheria. Patients who had been sick for three or four days with diphtheria had been apparently greatly benefited by the antitoxine treatment; some undoubtedly were, but most of these had had a mild attack and would probably have recovered in any case. Mention had been made this evening about the persistence of the membrane. In his opinion, this was not exactly a persistence of true membrane, but of a very slight, thin layer of exudate which formed on the ulcerated surface left after the exfoliation of the original diphtheritic membrane. He thought that few would take the same view of laryngeal diphtheria held by Dr. Winters. Certainly, many laryngeal cases developed very suddenly, and the patients died within a very short time. He recalled one case in which death had occurred within twenty-four hours after the onset of the disease, and yet scarcely any membrane had been found in the larynx. These deaths had been due to the direct absorption of toxine. There was a large number of suspected cases, formerly called diphtheria, which were now ruled out, so that this would seem to fairly offset the increased number of cases resulting from the bacteriological diagnosis. In 1895 the number of persons with diphtheria admitted to the hospital had been larger than the year before, but the cases had certainly been as severe as those of last year. He had read Dr. Ewing's report very carefully, and had understood from this that there had been a sudden decrease in the leucocytes after injections of antitoxine. The danger of a rapid decrease in the abnormally large number of leucocytes present had been discussed from a theoretical standpoint only. Dr. J. S. Billings, Jr., had found in the examinations of the blood in a small number of cases that the red blood-corpuscles were in greater number in those diphtheria patients who had received the antitoxine than in those of equal severity not treated with it. As to the comparative mortality in the city at large and in the hospitals, it was necessary to keep in mind that in the city many cases of diphtheria were not reported, whereas all the fatal cases were reported. In the hospital, of course, all cases were considered. It was possible, therefore, under exceptional circumstances, for the hospital mortality to be lower than the reported city mortality.

Dr. H. M. Biggs said that Dr. Winters had stated that it had been originally maintained that antitoxine would control

sepsis. He could not understand how any bacteriologist could make such a statement; moreover, Roux, in his first communication, had carefully separated these septic cases from the others. In the Institute for Contagious Diseases in Berlin it had been specifically stated and restated that diphtheria antitoxine would not affect sepsis. So far as he knew, no one had ever made the statement that "one hundred per cent. of the patients treated on the first day would recover," and the same might be said regarding the "ninety-seven per cent. recovering if treated on the second day." The fact that ninety-seven per cent. did recover in a certain series of cases was a very different matter. Dr. Winters had stated in April and again now that there was and had been little diphtheria in New York. In reply, he would only say that during the year 1894 there had been 2,800 deaths from diphtheria and croup, a larger number than in any preceding year in the city of New York, with one exception. As to the present mortality in London, he would only say that at the Congress in London in 1894, before the discussion on antitoxine, nearly a day had been given to the discussion of the enormous increase from diphtheria in the cities of Great Britain. Dr. Winters had been compelled to identify by description the men whom he had quoted as opposing antitoxine, but he had not referred to the many eminent observers who had given their unqualified support to the antitoxine treatment, and who needed no identification further than the mere mention of their names.

Dr. Winters replied that the physician who had charge of the Infectious Hospital, Dr. C. Muirhead, had stated that antitoxine had done absolutely nothing in that hospital. He had written the report, but had not felt like publishing it yet. The speaker said he wished to state that in eight hospitals in Europe those in charge had stated to him positively that antitoxine had done absolutely nothing under their observation. There were several other hospitals where grave doubts had been expressed as to the value of antitoxine, whereas formerly the speakers had been advocates of this treatment.

Dr. Alexander Lambert said that probably one reason that some English physicians were so disappointed was that they had used certain English antitoxine, and some of the serum on the market there was practically worthless. One specimen he had seen examined, purporting to contain a hundred units, did not contain even ten units, according to their own standard. In Paris, Berlin, Vienna, Amsterdam, Brussels, and other cities where the antitoxine was most used there was the greatest enthusiasm over it.

Dr. H. W. Berg said that almost all of the speakers had taken a statistical view of the effects of antitoxine, but the fallacies of such reasoning were well known. For instance, it had been stated that in 1894 and 1895 the death-rate in the city of New York had suddenly fallen below that of the Willard Parker Hospital, whereas in 1892, 1893, and 1894 it had been greater than in the hospital. In these years general practitioners had been prone to report cases of diphtheria only just before signing the death certificate, and the mild cases had not been reported at all. But suddenly in 1894, through the exertions of the bacteriological department of the board of health, a different order had been instituted, and both severe and mild cases were now promptly reported. However, the death-rate had remained the same in the Willard Parker Hospital. This was the explanation of the remarkable statistics quoted by Dr. Coakley.

The speaker said he had begun to use antitoxine in private practice because it had appeared to him a logical remedy, and if it proved to be disappointing it was because there was no virtue in logic. He had, however, used it only in the severe cases of diphtheria. The first case in which he had tried the antitoxine was one which had already been in progress for seven days. The temperature had been 104·5°, the child in a position of opisthotonus and semi-comatose, and the breathing loud and labored—it was evidently dying from septic diphtheria. To his surprise, when seen the next day, instead of the child being dead, it was sitting up in bed. He felt perfectly certain that the child would have died without the antitoxine treatment. This case had taught him that antitoxine was a remarkable curative agent in diphtheria. The reason the death-rate in the Willard Parker Hospital was high was that a large proportion of patients were admitted in an advanced stage, the cases were relatively more severe than those seen outside of the hospital, and the patients were poor and ill-nourished. He had been surprised at the statement of Dr. Winters that the frequent late development of broncho-pneumonia was due to the antitoxine treatment. Such cases had not been uncommonly observed in the hospital before the introduction of the antitoxine treatment, and no adequate explanation had yet been offered. He could not agree to Dr. Winters's statement regarding laryngeal diphtheria, for he felt that it was generally primary and not secondary. He was positive that if Dr. Winters would inject antitoxine in a single bad case of diphtheria in private practice, he would learn more than from all the statistics he could gather in a year.

Dr. Brannan said that some of the speakers apparently thought that the lessened mortality this year was due to the fact that the type of the disease was milder than last year. But if this were the case the reduction in the death-rate should be uniform. Table II, however, showed that this was not true. The mortality was reduced only in those cases in which the patients entered the hospital at an early stage of the disease, at a time when antitoxine was said to be most efficient. Patients coming under treatment late in the disease died this year as they did last year, in the proportion of one in three.

Regarding the occurrence of broncho-pneumonia, he thought that its prevalence was probably partly due to the insufficient air space allowed in the hospital. Modern authorities maintained that from a hundred to a hundred and twenty square feet of floor space should be given to each patient, even in general hospitals. In the Willard Parker Hospital the size of the wards did not allow more than eighty square feet of floor space to each patient, and even less than that in times of epidemic. He felt that in this direction was to be found the means of eliminating much of the broncho-pneumonia, and consequently of reducing the mortality.

Elevating the foot of the bed in all cases of intubated patients was another important measure now under trial. Drainage away from the lungs was thus secured, counteracting the natural tendency of the secretions in the nasopharynx to gravitate through the larynx into the trachea and bronchi.

The good effects of antitoxine in laryngeal diphtheria he believed were due to the fact that it prevented further formation and extension of the membrane. As already stated in the paper, he had seen no particular change in the membrane already formed, but he had also seen no new formation of membrane after the administration of antitoxine.

The speaker admitted that the slightly higher mortality this year in children under two years of age had at first been rather puzzling to him. Further analysis of the cases, however, had shown that three of last year's patients had been given antitoxine and had all recovered. If these three cases were taken from last year's group and added to those of this year, where they belonged, then the percentage of deaths was almost identical in the two years. This would seem to sup-

ort the contention of the speaker that but little effect was o be expected from any treatment in children under two ears of age entering the hospital at an advanced stage of the isease.

Book Notices.

'he Theory and Practice of Counter-irritation. By H. Cameron Gillies, M. D. London and New York: Macmillan & Co., 1895. Pp. xii–236. [Price, $2.50.]

This work is divided into two parts. Part I bears the itle Historical and Critical, and is an interesting and readble presentation and criticism of the literature of the theory f counter-irritation. That its critical portions are dogmatic nd often unreasonable is true, but their object, we perceive s we read, is prefatory to the part wherein the author is to onstruct upon these ruined theories, and in part from them, final and conclusive explanation of the way in which the o-called counter-irritants act. This climax (the reader might vell be pardoned for thinking it an anticlimax) is reached in he seventh chapter, which is entitled A New Theory Stated nd Discussed, and of which the gist, to quote from its conlusions, is as follows:

"The sum and the substance of our inquiry so far may be airly stated as follows: By abundant proofs counter-irritaion is shown to be a most valuable mode of treatment, when ightly used. It is freely admitted that the principles underying the practice are not well understood, and that therefore counter-irritation may sometimes be wrongly applied and do harm. All such interpretations as were implied in such words as revulsion, derivation, evacuations, vicarious action, metastasis, etc., have been disproved, and should be allowed o fall out of medical terminology. Diversion is sometimes possible, but perhaps always wrong. Counter-irritation itself s a misnomer; it does not in any sense check or divert or act counter to the processes of inflammation. It does not *counter*-irritate when it serves any good purpose. Inflammaion is the reparative process; and the intention of the proess is the same at every step—in congestion, in stasis, and in resolution. Active congestion is essentially the same as inflammation—the same in process and the same in effect. It nay, however, be convenient to retain the term inflammation for that physiological activity *which is directed to the repair of an injury.* All external stimulant or irritant applications act essentially alike. From the mildest rubefacient to the actual cautery, they produce active congestion in the degree of their ntensity; and if they are violent enough to injure the tissues here must be a further inflammation to the extent of the njury.

"Whatever good comes by the use of counter-irritants is because, by their irritant effects, they stimulate the activity of the tissues of the part to which they are applied and accelerate the blood supply thereto, so increasing nutrition or repair as the need may be. The response to an irritation is as the vitality of the part or of the individual. Therefore, to produce desired effects in the aged and weak it may be necessary to apply stronger irritation than in the case of the young and healthy. Logically, an irritant applied for a reparative purpose should never be so strong as to become itself a cause of disease; and perhaps this would be a good rule in practice also.

"In practice, the kind of stimulant and the strength to be used must be regulated or determined by the conditions and circumstances of each case. The pain of an injury in the young and healthy is always the natural and sufficient irritation to determine repair, but if there be lasting pain and no responsive acceleration of function in a part the assistance of counter-irritation is plainly called for. On the other hand, if in response to the pain of the injury active inflammation has set in, further stimulation is not necessary—so long especially as the inflammatory activity is sufficient. Disease is always the expression of defective nutrition or textural decay and degeneration or death, so the support of the constitution is the first essential in all treatment. Regarding internal inflammations—as of the serous membranes and viscera—reasons are daily accumulating to indicate that they will come under the same general rules of treatment as inflammation in other and superficial parts."

That internal inflammations receive so scant a considera tion is certainly curious. We are under the impression that they afford as valuable evidence of the usefulness of counter-irritation as any. Yet the writer seems scarcely to contemplate this; at least his theory is apparently incompetent to cover it. Such words as he sees fit to give to the external treatment of internal inflammations are vague and non-committal. For example, he says: "We are content to leave it in doubt whether inflammatory conditions of the lungs and liver and other internal organs come within the range in which counter-irritation is useful. The indications seem to be that it may serve good in such conditions. Our experience of the treatment of acute affections of the stomach and kidneys would seem to point distinctly in this direction"; and again: "It is by no means certain that an irritation of the skin can influence or affect parts which, like the lungs, are anatomically separate from it *except by indirect and distant ways.*" In that one statement lies the whole gist of the matter. Counter-irritants undoubtedly do affect deep organs and structures as well as superficial ones. Of their influence upon deep organs neither the "new theory" of Dr. Gillies nor any other that we are aware of is a satisfactory or convincing explanation. Of their superficial action, superficial not in the integumentary sense but with the meaning of anatomical propinquity and especially of direct circulatory connection between the area which is diseased and that to which the irritant application is made, we are quite prepared to accept the theory of the author and to assure him that his emphatic "we can not detect a single flaw in the argument" is unnecessary; but we are skeptical as to the propriety of calling the theory "new." To explain in part, however, is not enough, and we must frankly confess that of the mechanics of counter-irritation in its full and complete meaning we are as much as ever in the dark.

Part II is entitled Practical, and certainly is much the superior of Part I. Indeed, it is a very excellent production, and especially that chapter of it in which the counter-irritant remedies and procedures are discussed. A highly interesting chapter too deals with Some Special Uses of Counter-irritation. In this is lengthily considered the treatment of acute articular rheumatism by blistering in the neighborhood of the affected joints. That the procedure has been successful seems evident, and the theory that the success is due to direct abstraction of the rheumatic poison in the serum of the blister is attractive and interesting, but the idea that lactic acid is that poison is entertained with too much seriousness.

A Pictorial Atlas of Skin Diseases and Syphilitic Affections in Photo-lithochromes from Models in the Museum of the Saint-Louis Hospital, Paris. With Explanatory Woodcuts and Text by Ernest Besnier, Physician to the Saint-

Louis Hospital, etc.; A. Fournier, Professor of the Faculty of Medicine, etc.; Tenneson, Physician to the Saint-Louis Hospital; Hallopeau, Member of the Academy of Medicine, etc., and Du Castel, Physician to the Saint-Louis Hospital. With the Co-operation of Henri Feulard, Curator of the Museum, and Léon Jacquet, Secretary of the Dermatological Society of France. Edited and annotated by J. J. Pringle, M. B., F. R. C. P., Assistant Physician to and Physician to the Department for Diseases of the Skin at the Middlesex Hospital, London. London: F. J. Rebman. Philadelphia: W. B. Saunders, 1895. Part I. Pp. 28. [Price, $3, each part.]

We have had the pleasure of studying Part I of the new *Pictorial Atlas of Skin Diseases* issued with the authority of the staff of the Saint-Louis Hospital, Paris.

By those who have had the advantage of seeing the museum of this hospital the work will be much valued as a reminder of its wonderful *moulages*, especially those of morbid conditions of the skin by Barretta, which, so surprisingly true to life and so exquisite in finish, constitute the chief features of interest in the museum and have done so much toward making this collection of studies of cutaneous and syphilitic diseases the unrivaled one that it is. This atlas is intended as a pictorial representation of several of these famous models of dermatological and syphilitic cases, and will differ from other publications of similar character in that the illustrations will chiefly represent *typical* rather than *rare* cases only. The plan of the work is not alone to give reproductions of some of the well-known casts in the museum, but to have the descriptive letterpress come from the hands of the physicians under whose charge the patients that were the models have been treated; and by matter from such men as Fournier and Besnier appended to two descriptions in this part the value of the work as a text-book of skin diseases is considerably enhanced. The introduction of explanatory woodcuts in the text is a novel and most important feature which greatly furthers the easier understanding of the excellent plates, than which nothing, we venture to say, has been seen better in point of correctness, beauty, and general merit.

Plate I represents a case of lupus vulgaris. The color of the tubercles, so difficult to portray, is as nearly typical as the possibilities of art will allow. The other features of the lesions are depicted with a faithfulness that enables one to distinguish them at a glance from all other tubercles, especially those of leprosy and syphilis. The explanatory text is by Besnier.

Plate II, illustrating an unusual case of dermatitis herpetiformis, is the finest plate given in this part of the atlas. The back of the hand and lower forearm are the parts portrayed, and the details of the normal skin, as well as of the characteristic lesions of the diseased part, are rendered with an accuracy and vividness that make this plate phenomenal.

Fasciculus III, treating of syphilitic chancres of the female genitals, is perhaps the most important, not alone by reason of the illustrations, but on account of the text by Fournier. The description of the several varieties of this lesion which are represented in the colored plate and the four excellent wood-cuts is characterized by the force and clearness that always distinguish the writings of this master.

Plate IV is an excellent illustration of purpuric erythema, and all the various color stages through which this eruption passes are given with fine effect. The text of this fasciculus is by Henri Feulard, the able chief of the skin clinic at the Hôpital des enfants malades, Paris. These four fasciculi make up a sum of such excellence that one is loath to point out defects. Two typographical errors have crept in—twice the word *left* is used for *right*. On page 7, "on the left upper lip" should read on the right upper lip. Again, on page 17, "on the left labium majus" should read on the right labium majus. The faults, however, are not vital, but only jar amid so much perfection.

BOOKS, ETC., RECEIVED.

Twentieth Century Practice. An International Encyclopædia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by Thomas L. Stedman, M.D. In Twenty Volumes. Volume VI. Diseases of the Respiratory Organs. New York: William Wood & Co., 1896. Pp vi–743.

Medical Jurisprudence, Forensic Medicine, and Toxicology. By R. A. Witthaus, A. M., M. D., Professor of Chemistry, Physics, and Hygiene in the University of the City of New York, etc., and Tracy C. Becker, A. B., LL. B., Professor of Criminal Law and Medical Jurisprudence in the University of Buffalo. With the Collaboration of August Becker, Esq., Charles A. Boston, Esq.; the Hon. Goodwin Brown; W. N. Bullard, M. D.; G. C. Cameron, M. D.; J. Clifton Edgar, M. D.; G. J. Edwards, Esq.; E. D. Fisher, M. D.; J. C. Johnson, M. D.; D. S. Lamb, M. D.; H. P. Loomis, M. D.; David Murray, Esq.; W. B. Outten, M. D.; Roswell Park, M. D.; W. T. Parker, M. D.; J. Parmenter, M. D.; the Hon. William A. Poste; Irving C. Rosse, M. D.; E. V. Stoddard, M. D.; Edward S. Wood, M. D.; George Woolsey, M. D.; and J. H. Woodward, M. D. Volume III. New York: William Wood & Co., 1896. Pp. 697.

Students' Aid in Ophthalmology. By Gertrude A. Walker, A. B., M. D., Clinical Instructor in Diseases of the Eye at the Woman's Medical College of Pennsylvania. Forty Illustrations and Colored Plate. Philadelphia: P. Blakiston, Son, & Co., 1895. Pp. 9 to 183. [Price, $1.50.]

Climate and Health. Edited under the Direction of Professor Willis L. Moore, Chief of Weather Bureau. By W. F. R. Phillips, M. D. No. 5. A Summary of Statistics for the Five Weeks ending November 30, 1895. [United States Department of Agriculture.]

Formulaire des médicaments nouveaux pour 1896. Par H. Bocquillon-Limousin, membre des sociétés de pharmacie et de thérapeutique, etc. Avec une introduction par Henri Huchard, médecin de l'hôpital Necker. Paris: J. B. Baillière et fils, 1896. Pp. viii–9 to 316. [Price, 3 *frs.*]

The Johns Hopkins Hospital Reports. Volume V.

Report on the Social Statistics of Cities in the United States at the Eleventh Census, 1890. [Department of the Interior.]

Report of the Chief of the Weather Bureau for 1895. By Willis L. Moore. [United States Department of Agriculture.]

Presbyterian Eye, Ear, and Throat Charity Hospital Reports. January, 1896. No. 1.

Two Cases of Gastric Cancer, with Interesting Clinical Features. By Howard Anders, M. D. [Reprinted from the *Codex Medicus Philadelphiæ.*]

The Present Status of the Sanitary Movement for the Adoption of the Individual Communion Cup. By Howard Anders, M. D. [Reprinted from the *Codex Medicus Philadelphiæ.*]

A Case of Third Attack of Typhoid Fever; with Remarks on Recrudescence, Relapse, and Recurrence in Typhoid Fever. By Howard Anders, M. D. [Reprinted from the *Codex Medicus Philadelphiæ.*]

A Case of Uræmic Convulsions; Venesection; Recovery. Remarks. By Howard Anders, M. D. [Reprinted from the *Charlotte Medical Journal.*]

The Therapeusis of the Saints. By Walter L. Pyle, M. D., Washington, D. C. [Reprinted from the *Medical News*.]

Miscellany.

The Neurotic Origin of Pulmonary Consumption.—In a y interesting address to the graduating class of Dartuth Medical College, published in the *Transactions of New Hampshire Medical Society* for 1895, Dr. A. Noel ith, of Dover, among other things, points out the im·tant fact that the instruction which young graduates eive at medical colleges is but a part of the broader ıcation which they will receive afterward, and reminds ·m that they must go out into the world as independent nkers and with a sufficient mental equipment to de- e intelligently between the various conflicting theories ich crowd upon them. As an instance of such disagreent he refers to the different theories which are held in re·d to the origin of pulmonary consumption. On this ques- n, he says, by far the majority will be arrayed on the side the bacteriologist, who latterly has been accounting for all nearly all the diseased conditions of the human economy. trifle more conservative element would say that in general e question of the origin of phthisis resolved itself into (1) ›gressive malnutrition, (2) some of the causes of inflamma- n, and (3) the introduction of the tubercle bacillus. But, the tubercle bacillus is the only thing which stamps the ease as a tuberculous process, it must be regarded as an ential ætiological factor, and without it there can be no ›erculosis.

Another section of scientific workers would answer that e bacillus was not the sole cause of phthisis, but only ›art of the life-history of certain microscopic plants in the ·tem; and still another class of workers would contend for ›urely neurotic origin of phthisis.

After referring to the view of the Cutters, of New York, ıich holds that this disease is caused by the introduction of e yeast plant into the blood through the small intestines, he ys that the theory that phthisis is a neurosis is ably cham- ›ned by Dr. Thomas J. Mays, of Philadelphia. His treatise *Pulmonary Consumption, a Nervous Disease*, and supple- ›ntary writings, are ingenious defenses of his well-wrought eory. His study of this theory has extended over eight ars, and he believes that it better accounts for the exist- ce of phthisis than anything else, that the theory is in per- ›t harmony with the therapeutic indications of the disease, d that there is no specific treatment and never will be ex- ›t that which strives to support the nervous system and the nstitution of the patient.

"In a masterly and convincing manner, he originates the ·ease in the vagus nerve, and establishes by authorities ed, and many tabulated cases, the relation existing be- een consumption, syphilis, epilepsy, diabetes, leprosy, in- nity, hysteria, neuralgia, and other nervous affections. He es not hesitate to affirm that the bacillus has never been oved to give rise to phthisis as it is found in the human bject. It is admitted that tuberculosis may be produced by ›culation in the lower animals, but denied that this is any oof of the same thing taking place when the disease is pro- ced in a natural way. 'Nature,' he says, 'does not go ›und and inject the bacilli into people with a syringe.' The tificial and natural production of consumption are two dif- rent things entirely. The fact is cited that the great majority of cases of phthisis begin as catarrhal pneumonia, and not as a tuberculosis.

"Dr. Mays does not believe that the bacillus causes phthisis by inhalation or ingestion, although he admits that certain cases of acute miliary tuberculosis arise through infection, not from outside, but a true auto-infection. Whenever caseation occurs in the body as a result of inflammation, a virus may be produced which is capable of giving rise to true tubercle. He goes on to say that this virus may be, and he thinks probably is, the bacillus. This auto-infection occurs in a limited degree around lung cavities which result from caseous degeneration.

"As Dr. Mays believes that disease of the pneumogastric nerves is the fundamental lesion in phthisis, I took the liberty to ask him whether the presence of the *Bacillus tuberculosis* in the system might not be responsible for such lesion. This he can not for a moment entertain, and says: 'Given a cause which will produce degeneration in the vagi, and *phthisis* may occur, but *lung* disease in *some* form will *always* occur. This has been proved beyond a doubt. The bacilli are a mere product. Why, if the bacilli are the cause of phthisis, should they seek only those who have a broken-down nervous system and infect them? Why should they select the insane and idiotic, who nearly all die of phthisis? Why should they pick out the hysterical, the epileptic, the asthmatic, the diabetic, the neurotic, the alcoholic, the syphilitic, lepers, workers in mercury and lead, and leave those entirely unharmed who are constantly exposed to their presence?'"

Thus the primary cause of the degeneration of the vagi he would make due to anything producing a depressing effect through the general system, such as grief, worry, mental overwork, disappointment, the diseases mentioned above, and whatever might act directly through the nerves themselves, such as the pressure of an aneurysm or of cervical or bronchial glands, weakness caused in children by diphtheria or scarlatina, while in after years general nervous depression might be superadded.

In short, says Dr. Smith, the advocates of this neurotic theory maintain that all diseases have an attendant microorganism; that the natural is very different from the artificial production of phthisis; that inoculability is no proof of practical contagiousness; that consumption is only contagious on suspicion; that the victims of phthisis bear no correspondence to the numbers exposed to the bacilli; that all treatment founded on the bacillus theory has failed; that catarrhal phthisis can be produced in animals by section of the pneumogastric; that this nerve is primarily diseased in consumption; and that the neurotic theory shows cause and effect in a more rational way than any other theory does.

Thus, he adds, we have to-day what might be styled the orthodox bacteriologist on the one hand, and the, at present, heterodox opposition on the other hand, which may possibly in turn become orthodox. Not only do we have Mays, the Cutters, and others at the head of formulated theories, but clinical experiences multiply doubters.

Nervous Insomnia.—In the *Gazette hebdomadaire de médecine et de chirurgie* for January 19th, in an article on this subject, the writer says that in cases in which insomnia is due only to simple over-excitation of the encephalic cells the following rules and prescriptions may be recommended: All prolonged literary work at night, remaining in very hot rooms for any length of time, and a too abundant and too exciting diet should be avoided. A capsule containing fifteen grains of sulphonal, or one containing twelve grains of trional combined with four grains of sodium bicarbonate, may be taken

in the evening just before eating. In order to insure the proper action of these drugs and to avoid accidents, sulphonal and trional should not be used in too large doses in the beginning, and their employment should never be continued for more than two or three days at a time. Persons who can not swallow capsules may take sulphonal pure or in sugar flavored with vanilla, or incorporated in preserves or in syrup. If this mode of administration is preferred, the sulphonal should be taken just before bedtime, but it must be immediately followed by a hot infusion of linden flowers or of orange leaves. When sulphonal and trional fail the following preparations of potassium bromide may be tried:

1. Potassium bromide..... 150 grains;
   Distilled water..... 3·75 ounces.

A dessertspoonful of this is to be taken in sweetened water or in a hot infusion of orange leaves. If the insomnia persists, the dose may be repeated in an hour.

2. Potassium bromide..... 75 grains;
   Syrup of aconite..... 600 "
   Syrup of bitter orange skin..... 900 "

A dessertspoonful of this syrup is to be taken in a quarter of a glass of pure water or in a hot infusion.

Bromide may be associated with chloral hydrate, if there is no cardiac trouble, in the following manner:

Potassium bromide..... 60 grains;
Chloral hydrate..... 45 "
Syrup of raspberries..... 3 ounces.

A dessertspoonful of this syrup may be taken in half a glass of pure water. If the insomnia persists the dose may be repeated in an hour. Preparations of opium rarely succeed in this affection, but it may be tried combined with hyoscyamus as follows:

Extract of opium..... 0·4 grain;
Extract of hyoscyamus..... 0·3 "
Powdered licorice..... q. s.

One such pill is to be taken about three hours after the last meal.

Hæmorrhage following the Extraction of a Tooth arrested instantly by Ethyl Chloride.—The *Lancet* for January 25th publishes the following report of a case by Mr. A. E. Hind: The patient, a girl twenty years old, had a tooth extracted at noon. At ten o'clock at night she was bleeding freely from the socket of a lower molar tooth, and she stated that the bleeding had been continuous since the extraction of the tooth. Pressure and plugging with perchloride of iron had been resorted to without any result. Remembering, says the author, a similar case in which all ordinary methods of treatment had been resisted, he resolved to try freezing with ethyl chloride spray. After clearing out the clots, the author used the spray and was able to stop the bleeding immediately. To prevent its recurring, he plugged the socket with wool soaked in tincture of hamamelis. There was no pain, and no more blood escaped. Although ethyl chloride is used for producing anæsthesia in small operations, this case, says Mr. Hind, suggests a further use of it.

The Therapeutic Value of Oxygen.—The January number of *Clinical Sketches* contains an abstract of a paper which was recently read before the Liverpool Medical Institution by Dr. Charles J. Macalister, of the Liverpool Stanley Hospital. The author described two cases in which the inhalation of oxygen had proved to be of great value.

The first case was that of a man, thirty-nine years old, who had pains in his limbs, severe headache, and frequent vomiting, which had been attributed to a series of exposures to cold and wet. He had an alcoholic appearance. The urine was diminished in amount, and contained more than a quarter of albumin. The temperature was normal.

Two days after he entered the hospital he seemed drowsy and complained of spots floating before his eyes. The respiration was hurried and the pulse was 82. There was severe frontal headache, with some vomiting; the bowels moved freely. In the afternoon the patient became delirious, and later on he was found to be absolutely blind. The temperature was 100·8° F.; the pupils were very much contracted, with no reaction to light; there were no muscular twitchings. Early in the evening he became semi-comatose; the breathing was loud and stertorous, and the lips, the nose, and the extremities were somewhat cyanosed. The temperature was 101° F. Two hours later he was in a profound coma; his eyes were open and the pupils were contracted to pinpoints; the muscles were relaxed, the extremities were cyanosed, the mouth was closed, and the heart beat tumultuously. The pulse was 118; there was œdema of the extremities. The patient was insensitive to pain and was apparently under the influence of some poison which interfered with oxidation.

Dr. Macalister administered oxygen freely, pure oxygen through one nostril and air through the other. The results were very striking, says the writer, for the face and the lips rapidly became less cyanosed, and in ten minutes the patient tried to push the tube from his nose. The pulse was at once reduced from 118 to 96 beats a minute. The respirations became slower and freer from stertor, and the pupils were less contracted; the corneæ were sensitive. Later on the patient turned voluntarily on to his side, but no replies could be elicited to questions. A cupping-glass was then applied over the loin, and the pain effectually aroused him. He sat up in bed and became so violent that assistance was necessary to restrain him, although he took no notice of any questions put to him and made no attempt to speak. He presently relapsed into a drowsy condition, and the administration of the oxygen was repeated, and ten minutes later he sat up and asked for a drink. There was no return of unconsciousness, although two days later there was a threatening of it, which was averted by the oxygen. In twenty-four hours the urine measured a hundred and eight ounces, and contained an eighth of albumin with hyaline and granular casts; the specific gravity was 1·005.

Four days later the patient was able to see; the ophthalmoscope showed small hæmorrhages, especially in the left fundus. A few days afterward the headache disappeared and the albumin rapidly subsided. A week later the man left the hospital perfectly well.

The second case, says the writer, was one of morphine poisoning, and the cure seemed to have been accelerated by the use of oxygen.

Ringworm of the Nails.—At a recent meeting of the *Société de dermatologie*, a report of which appears in the *Journal des praticiens* for January 25th, M. Sabouraud presented a patient who suffered with this persistent affection. The best treatment, he said, was the application of compresses saturated in the following solution:

Iodine..... 15 grains;
Water..... 31 ounces;
Potassium iodide..... q. s.

The Management of Cases after Recovery from Appendicular Abscess in which the Appendix was not Removed.—In the February number of *Medicine* there is an article on this subject in which the author, Dr. John D. S. Davis, of Birmingham, Ala., remarks that the practice of dealing with

ppendicular abscess by simply evacuating the pus and drain-ng the cavity thoroughly, without any very extensive search r the breaking up of adhesions in order to find the appen-ix, has been adopted by a large number of leading operators or some time past. More recently, he says, some surgeons ave contended that the operation should be made complete n all cases, and that all adhesions should be freed and the ppendix removed.

The operation for an appendicular abscess, says the author, s usually one of the simplest of procedures, and it is attend-d with hardly any danger. Where the inflammation is cir-umscribed and the drainage is thorough, nearly all the pa-ients recover. They suffer no shock from such an operation, he temperature becomes normal or nearly normal at once, nd the condition is one of convalescence almost immediately fter the operation. The records of operations for appen-icular abscess show that the great majority of patients are ured after evacuation and complete drainage. Recurrence f the disease in such cases is very rare. The appendix, in a arge proportion of cases, ruptures before the abscess forms, nd is completely drained through the abscess and perma-nently cured. In others the appendix is destroyed by the in-flammation, and there is nothing left of it when the abscess is operated on. An extensive search for the appendix is apt to break up adhesions and allow the escape of septic fluid into the general peritoneal cavity. Thus a very simple condition may be converted into one of the most serious that could happen. Surely, says the author, such a risk should not be hazarded when it is so easily avoided. Even if life is saved after such an operation, the patient will have all the annoying symptoms, such as thirst, pain, restlessness, etc., that are found in cases of abdominal section, and these are not en-countered after operating on an abscess in the other and sim-pler way. It is well enough to search for the appendix by gentle manipulation, and, if it is found without any great difficulty, it should be removed; it is not even necessary to use a ligature if there is any difficulty in applying it, as the opening will be into the abscess cavity and do no harm; should there be any bleeding from its removal, the packing of gauze would control it.

After such operations, says Dr. Davis, there will be a small percentage of cases of recurrent inflammation. If the patient is lost from such an attack, the surgeon is likely to be criticised and to be blamed for not having done a com-plete operation at the time the abscess was opened, espe-cially if it is the prevailing opinion of leading operators that a radical operation should be done in every case, and for this reason, he says, he wishes to emphasize the great error of such teaching and to advocate the simpler plan.

There can not be much need of breaking up the adhesions, for they give way in a short time after the abscess is relieved; they do not remain permanent, as has been alleged by a num-ber of surgeons. In breaking up these adhesions, in addition to the danger already mentioned, a favorable condition is prepared for fresh adhesions, with the possibility of the bowel being fastened in a position that will produce pain and often obstruction.

There are cases of abscess, says the author, in which it is impossible to evacuate the pus extra-peritoneally, but in such cases we can so completely wall off the general peritoneal cavity, while the pus is being evacuated, that there will be no possible escape of the fluid into it. After the abscess is thor-oughly cleansed and its cavity packed with gauze, the chances for recovery are good. Still, the gravity of such an opera-tion, he says, is many times greater than that of the operation on an abscess which has become attached to the abdominal wall. It is conceded that there is often a small collection of pus around the appendix, and in cases of early operation for such a condition it is proper to remove the appendix and pack gauze around the field of operation.

Among the large number of operations for appendicular abscess, in which the author and his brother, Dr. W. E. B. Davis, have pursued the plan already outlined, there have been only five cases of recurrence. Should there be a return of the disease, or should pain continue for some time after the patient is able to be up, the appendix ought to be removed. Indeed, says Dr. Davis, a patient should be thoroughly im-pressed with the importance of not going on without another operation should there be discomfort in the region of the ap-pendix, for such discomfort shows conclusively that the ap-pendix has not been cured, and that there is likely to be an-other attack which may cause the patient's death. Should there be another attack of inflammation, an operation should be done within the first twelve hours after its onset; if it is not done within that time, a general inflammation may be established which can not be relieved by surgery, although the attack may be a very slight one.

The author states that in the plan advocated by him there would be the risk of losing some patients from a recurrent attack, but that the danger is not to be compared to the fatal-ity which would occur by the general adoption of the radical operation now urged by some of the leading surgeons.

In a discussion before the American Association of Ob-stetricians and Gynæcologists, says the author, Dr. W. E. B. Davis said that, in recommending the breaking up of adhe-sions and searching for the appendix in cases of appendicular abscess, he thought Dr. Morris and Dr. Price had advocated a dangerous practice, which might be attended with some success in careful and skillful hands, but in the majority of cases would be a dangerous procedure. He thought nothing could be more dangerous than to allow the smallest quantity of this septic pus to escape into the abdomen. If the appen-dix could not be found by very gentle manipulation, it was better to leave it alone and simply do a life-saving operation. When the abscess healed the intestine was largely freed from adhesions. There was no use in tying off the appendix, as it was destroyed by the inflammatory process. An operation should be resorted to if necessary after recovery from the abscess. In cases of appendicular inflammation in which we could operate early, before the formation of an abscess, we might do an ideal operation. Dr. Price, he said, had stated that quite frequently the appendix was not found at post-mortem examinations. This was explained by the fact that it had sloughed away. The inflammation was so destructive that it destroyed everything within its reach, and it would not do to allow such pus to escape into the general peritoneal cavity. Dr. W. E. B. Davis, says the author, quoted two cases in which a radical operation had been done after the evacua-tion of the abscess, as the appendix had still given trouble.

The Treatment of Soft Chancre.—The *Centralblatt für Chirurgie* for January 25th contains abstracts of two articles on the treatment of chancroid. The first, by Neisser, was published in the *Berliner klinische Wochenschrift*, 1895, No. 36. Neisser says that for many years he has observed the best results from cauterization with pure carbolic acid. The application, he says, is absolutely painless, it destroys the floor of the ulcer thoroughly, especially under overhanging borders of skin, it generally cleanses the sore very rapidly, and —a point on which the author lays special stress—it does not set up any artificial hard infiltration, as nitrate of silver does, to be subsequently mistaken for the induration of a syphilitic

chancre. After the cauterization he applies powdered iodoform and a two-per-cent. ointment of nitrate of silver. Neisser remarks that in four instances lately he has observed sores having the character of soft chancres, occurring three or four days after coitus, which did not heal under this treatment, but after a number of weeks became transformed into serpiginous syphilides; the soft chancre, he says, had become "provocative" of the starting-point of a tertiary syphilide, which was promptly cured with iodide of potassium. In such cases, says Neisser, one might readily be led to suppose that a reinfection had taken place; consequently mercury should not be given, for it cures primary, secondary, and tertiary manifestations alike, and thus makes the diagnosis impossible, while potassium iodide, which cures only tertiary affections, may be used with entire propriety.

The other article, by Frank, which appeared in the succeeding number of the *Wochenschrift*, seems to have been called forth by Neisser's. Frank uses formalin for effecting the destruction of the ulcerative surface. He says that after twelve hours it appears perfectly dry, as if frozen, and that in six days this dry layer is shed and the sore is perfectly healed in one or two days more. Formalin, too, he states, does not give rise to any induration of the surrounding tissues, and the pain occasioned by its application is slight and of but a few seconds' duration. In a few cases he has observed that after the shedding of the dried layer the sore showed a moist, glistening surface, without any tendency to heal, but in these cases induration appeared subsequently, together with other signs of syphilitic infection.

Myrrh in the Treatment of Diphtheria.—Miloslawski (*Medicinskoe Obosrenije*, 1895, No. 15; *Deutsche Medizinal-Zeitung*. Jan. 27, 1896) reports extraordinarily favorable results from the treatment of diphtheria with myrrh. From December, 1894, to February 15, 1895, in a village of the government of Saratow, he says, forty-two cases of diphtheria were treated with tincture of myrrh; twelve of them were severe, twenty were of medium severity, and ten were light. The patients' ages ranged from one to twenty-three years, but the majority were between ten and fifteen years old. Three died; one of them was a year old and two of them were three years old. All the patients were under the physician's direct observation. The treatment was carried out in the following manner: The preparation given internally consisted of

Tincture of myrrh	4 parts;
Glycerin	8 "
Distilled water	200 "

A teaspoonful of this mixture was given every hour to children under two years old, a dessertspoonful every hour to children from three to ten years old, and a tablespoonful every two hours to adults. In the case of children with whom the procedure was practicable, the pharynx was painted with tincture of myrrh four or five times, in addition; in that of adults gargling with the tincture was employed. Under this treatment the diphtheritic membrane began to be detached as early as on the second or third day, the temperature fell, and the general condition speedily improved. The average duration of the treatment was from six to eight days.

As regards the theory of the action of myrrh in diphtheria, it is assumed by some that it destroys the toxines and ptomaines which form in the affected parts and thence gain entrance to the blood, but the author calls to mind a statement of Binz's to the effect that seventy drops of tincture of myrrh would increase the number of the white blood-corpuscles fourfold, and so fortify the organism in its contest with the poison.

A Discussion on Bicycling took place at a recent meeting of the Berlin *Verein für innere Medicin*, and is reported in the *Therapeutische Wochenschrift* for January 26th. In regard to the dictum that old men ought not to indulge in the sport, Dr. Tiburtius remarked that his experience in his own case had been to the contrary, although he had a slight degree of emphysema and was affected with arteriosclerosis. He thought, however, that the machine should be modified by bringing the saddle farther forward and raising the handlebars.

Dr. Voss had observed a case of sudden death in a bicycle-rider, occurring at the end of a five minutes' ride, but the man, who was only forty years old, was thought to have degeneration of the heart, which was attributed to his smoking strong cigars immoderately. Similar cases had been reported in the French journals. In the speaker's opinion, the subjects of heart disease should generally be forbidden to use the bicycle.

Dr. Fürbringer, who was not himself a bicyclist, likened the exercise to that of mountain-climbing, in which he was experienced. With each there was sometimes great loss of flesh. He himself had lost not less than five pounds in fourteen hours in the Alps, for six hours of which time he had been knee-deep in snow. Mountain-climbing accelerated the pulse and was detrimental to the subjects of heart disease. Either form of exercise was allowable for phthisical persons, provided the disease was not in an active state; if it was, both bicycling and mountain-climbing should be interdicted. The speaker made the important remark that a number of persons belonging to perfectly healthy families contracted tuberculosis in consequence of Alpine tours, and that the fast walkers almost always died of phthisis. He alluded to a curious instance in which bicycling seemed to have cured a young man of ulcerative cystitis.

Dr. Becher thought rowing the safest form of exercise, for all the muscles were brought into play by it, and there was no inhalation of dust. Bicycling on dusty roads might well be dangerous to persons suffering from bronchial catarrh.

Dr. Leyden thought the chief danger of bicycle exercise came from carrying it to excess; apart from that, it was a wholesome sport, particularly to be recommended for ladies.

Dr. Eulenburg alluded to the curative action of bicycling in certain diseases of the nervous system. He spoke of Dr. Græme M. Hammond's observations in this direction, and added that he himself had prescribed it with good results for persons affected with neurasthenia; besides exerting the effect of exercise, it was diverting and inspiriting.

Dr. Placzek stated that a bicyclist would feel less fatigue in the feet if he touched the pedal with his toes rather than with the hollow of the foot. He, too, recommended bicycling particularly for women.

Supernumerary Breasts.—Goldberger (*Arch. f. Gynäk.*, xlix, 2; *Ctrlbl. f. Gynäk.*, Jan. 25, 1896) describes a case of polymastia in which the supernumerary mammary glands, two in number, were situated, one in the right axilla, and the other about three inches below the left axilla. At the time of their greatest development they were each as large as a goose's egg or an ordinary apple. Neither of them was provided with a nipple. Liquid taken by means of a hypodermic syringe from the right supernumerary breast was ascertained by means of microscopical examination to be milk. The author states that among the many cases of polymastia previously recorded there have been only four in which the supernumerary glands have been destitute of ducts opening on the surface.

Lectures and Addresses.

TOXINES OF THE STOMACH.

METHODS OF STUDYING TOXINES OF THE STOMACH.

An Abstract of a Lecture on the Bacteriology of the Stomach, from the "Jefferson Lectures," delivered at the Jefferson Medical College, Philadelphia, in February, 1896.

By FENTON B. TURCK, M. D.,
CHICAGO.

Various symptoms are produced by the absorption of the toxines formed in the stomach. Those of bacterial origin depend upon the groups of micro-organisms and the kind of media or soil in which they develop. The study of the toxines produced from a single species of micro-organism is a fruitless task. The study must be made from the groupings of various forms found in the stomach, both in the normal condition and in diseases of the stomach.

The toxines found in the stomach may be separated into two groups:

1. Those that are formed in digestion: albumoses and peptones.

2. Those that are produced by bacterial growth.

The separation of these two groups of poisons which act as such when injected into animals can not be satisfactorily effected by any chemical method. By withdrawing the stomach contents in the morning before breakfast and filtering through a sterilized Pasteur filter and heating the filtered gastric fluid under a vacuum below the boiling point to from 140° to 158° F., certain albumins are coagulated and may be separated from the rest. A concentration by this rapid method of evaporation occurs, which is accounted for in injecting into animals.

Cultures of the stomach bacteria are also made by making stroke cultures upon the prepared mucous membrane of the stomachs of pigs. Cultures are also made in bouillon prepared from the minced mucous membrane of the pig's stomach dissected from the muscle wall. The cultures thus made form toxines which are used for injection into animals and the action is studied.

Methods.—For the purpose of studying the toxines formed in the stomach, especially in gastritis with dilatation, the contents are drawn off in the morning before a meal is taken. In some cases I have washed out the stomach at night and waited until the next morning before taking the stomach fluid.

In others, at night, after cleaning out the stomach, I have introduced starch only, or albumen only, such as the white of egg. The contents are then withdrawn next morning in the usual manner. The fluid thus drawn off is filtered through a sterilized Pasteur filter until it is sterile. The contents are evaporated under a vacuum pump and the concentration is measured.

One cubic centimetre to one thousand grammes of the animal's weight is first injected, and the action carefully noted, with gradually increased "dosage." Separation of the coagulated albumin is then made by maintaining the heat at from 136° to 158° F. for four hours.

The fluid is again filtered and the injection made into the animal under the usual aseptic precautions.

The cultures made from the stomach and cultivated in bouillon are treated in a similar way as the fluid taken directly from the stomach.

Injections are made into animals and comparisons made of the action.

To illustrate the method I will cite this case and demonstrate the methods: J. C., aged thirty-five years, had gastritis in the first stages, with marked dilatation; a hundred and sixty cubic centimetres of the stomach contents were withdrawn in the morning, the patient having fasted fourteen hours. The stomach contents were filtered through paper and then through a Pasteur filter with the usual precautions and a "control" culture was made. A part of the contents (fifty cubic centimetres) was reserved for concentration (fifty cubic centimetres were also reserved for fractional coagulation)—that is, to get out the albumoses that would coagulate at 149° and 158° F. and separate in the manner just described. Fifty cubic centimetres of the stomach contents left were used for injection into animals just as they came through the Pasteur filter, so as to determine the toxic effect regardless of the composition.

To one thousand grammes of a rabbit's weight, eight cubic centimetres produced a paralysis of the hind legs within half an hour after the subcutaneous injection into the back. It presented the same toxic effect in some respects as is observed in rabbits bitten by venomous snakes: first, a slight tottering movement, then dragging of the hind legs.

After five cubic centimetres more had been injected the animal died within three hours.

When the concentrated injection from fifty cubic centimetres to twenty-five cubic centimetres was used, a somewhat similar result followed, requiring a little more than half the quantity to produce death in the animal. On separating the coagulated albumin in the third experiment there was a difference in the action of the filtrate and the coagulated or precipitated residuum that remained. The filtrate did not show the toxic effect until twenty-five cubic centimetres were used.

The coagulated albumin was placed in sterilized weak acid solution and injected. There was no marked action, except a tremor, until the next day, when the animal died. The post-mortem revealed a pyæmia, probably through infection.

While this case does not give positive evidence, it illustrates a method which I find useful in the study of toxines formed in the stomach.

Football Casualties.—During a game at Sparkhill on Saturday last a player ruptured his kidney and was admitted to the General Hospital. On the same day, in the course of a match at Swansea, between the Swansea and Cardiff teams, a player fractured his clavicle; and at Rochdale, in a match between the Athletic and Spotland Clubs, three members of the former club received injuries. One sustained a fracture of his patella, another an injury to his arm, and the third a fracture of his skull. Unfortunately the latter became unconscious and died the following day.—*Lancet.*

Original Communications.

THE DIAGNOSIS OF HYSTERIA.

By HUGH T. PATRICK, M. D.,
PROFESSOR OF NEUROLOGY IN THE CHICAGO POLYCLINIC;
INSTRUCTOR IN CLINICAL NEUROLOGY,
NORTHWESTERN UNIVERSITY MEDICAL SCHOOL;
CONSULTING NEUROLOGIST
TO THE ILLINOIS EASTERN HOSPITAL FOR THE INSANE, ETC.

(*Concluded from page 204.*)

The so-called hysterical "attacks" or "fits" are not considered in this paper, but there is one kind of attack that might be mentioned in connection with hysterical hyperæsthesia, of which the following case is apropos:

About seven years ago I was hastily summoned to a middle-aged woman, who had been passing through a period of family trouble of the most harassing kind, combined with severe physical strain. On the way the messenger hurriedly informed me that the woman had been for a number of years the subject of heart disease, that she had had a number of attacks similar to the present one, but they were afraid this one would carry her off. I found a rather gaunt patient sitting in a chair, greatly agitated and anxious, respiration rapid, rather loud, and gasping. She was by turns tossing the arms about, clutching at her throat, or pressing a hand over the præcordia. She was calling for air, for water, and exclaimed that she would die. Satisfactory auscultation was impossible because of the agitation of the patient and the noisy respiration. I made out some bronchial râles and a rapid pulse. From the actions of the patient and the known psychic influences, I made a diagnosis of hysteria and sent for some simple remedies. But a moment later I noticed the woman gasping in a way that was anything but hysterical, and I had just time to let her easily to the floor as she expired.

In spite of this most egregious error, there is such a thing as hysterical angina pectoris, or, perhaps, I should better say, hysterical pseudo-angina pectoris. I might add that in making this mistake I had the honor of being in good company. Professor Brissaud, of Paris, than whom there is no more astute diagnostician, told me of a case diagnosticated by Charcot, Debove, Potain, and himself as hysterical angina, and the patient died in one of her attacks while in Potain's care. Rigal, cited by Huchard, reported a case in which over two hundred attacks, very intense and accompanied by the characteristic agony and anxiety, occurred within a period of two years.

Hysterical angina occurs more frequently in women under forty, tends to periodicity, to become nocturnal, and the attacks are induced by violent emotion. True angina is more frequent in men beyond the age of forty, the paroxysms are diurnal, not periodical, and are caused by sudden exertion—walking against the wind, uphill, etc. In the former there is often a hyperæsthetic zone around the trunk at the level of the præcordium, but since the investigations of Head regarding referred pain and tenderness in organic heart disease this area loses some of its diagnostic value. The attack may begin with pain in this hyperæsthetic area or elsewhere—in the testicle, fingers, or toes. This is called the neuralgic type. In the vaso-motor form the face may be pale, cold, livid, or red, and like changes may affect the left arm. The duration of the attacks is from a few minutes to several hours. There is marked erethism of the heart and of the individual. The pulse varies from 90 to 150, may be irregular or intermittent, and the cardiac impulse is apt to be out of all proportion to the force of the pulse—the same as occurs in Graves's disease. The patient is agitated, restless, there is tachypnœa, and the attack may terminate in an hysterical faint or spasmodic laughter and weeping, with the evacuation of a large amount of limpid urine, eructations, or emesis. In the vaso-motor form the ejecta may contain blood. In true angina the pulse may be normal, respiration is generally normal, and the patient remains motionless in speechless agony. In the hysterical affection there is sometimes a mental condition approaching the dream state with visual hallucinations. The pupils may be dilated or contracted. The phrenic nerve seems to be always tender to pressure at the level of the scaleni muscles. An attack may be determined by pressure on a hysterogenic point if any are present. The crucial test would be the quantitative examination of the urine for the inversion of the phosphatic ratio, which Gilles de la Tourette and Cathelineau have found to be present after all hysterical paroxysms. The phosphoric acid is diminished twenty-five per cent., and the ratio of the earthy to the alkaline phosphates is as one to one instead of as one to three, the normal. But the subject is still in its infancy; there are exceptions to all diagnostic rules as yet discovered, and in a given case a positive diagnosis may be impossible.

Haphalgesia, first described by Pitres,* is exclusively a symptom of hysteria, but is infrequent. It "is a variety of paræsthesia characterized by the production of an intensely painful sensation by the simple application on the skin of certain substances which in the normal individual cause only the ordinary sensation of contact." These substances have ordinarily been certain metals.

The motor manifestations of hysteria are countless, and of these the paralyses are as various as those due to organic disease.

Although the general characteristics of hysterical paralysis were well described by Todd thirty-five years ago, and are nearly as distinctive as the general traits of hysterical anæsthesia, a wider knowledge of them seems to be desirable.

In hysterical hemiplegia or hemiparaplegia the gait alone is often a sufficient basis for the diagnosis. There is never the typical mowing gait of the ordinary hemiplegic—the pelvis elevated on the affected side, the leg stiff and swung round in a curve, the toe turned in (or maybe out) and catching the floor on the forward swing, and the foot set down flat or slightly on the toe. Neither is there the high step with foot drop of infantile paralysis and multiple neuritis, nor the typical spastic gait—knees approximated, the legs rigid and hitched along with a jerk. The gait *may* be typically ataxic, as will be seen later.

---

* *Leçons sur l'hystérie*, etc., vol. i, p. 65; Binet, *Rev. phil.*, August, 1889.

In general, the hysterical gait is a careful one. The steps are small and slow; one foot is dragged after the other or carefully and laboriously shoved a little in advance. There is apt to be a deal of swaying and balancing, a constant threat of falling, like a boy trying to walk a fence, with a tendency to fall toward the observer if he be near. No one group of muscles seems to be much weaker than the others, for hysterical paralysis is never neatly localized. Like the anæsthesia, its area of distribution is psychic rather than nervous. For instance, the flexors of an extremity are never paralyzed to the exclusion of the extensors, or the muscles supplied by the sciatic nerve to the exclusion of those supplied by the anterior crural.

Perhaps the most unmistakable characteristic of the hysterical gait—one that belongs solely to hysterical paralysis—is that the patient walks in such a way as to make unnecessary demands upon his muscles. He will walk only with the leg in extreme outward rotation, which is a tiresome way to walk, or with the knee flexed almost to a right angle, which is also far from easy. Some walk on the inner, some on the outer border of the foot. If the paresis is marked, the patient, instead of giving each foot a comparatively quick, short hitch forward, as it were, from the shoulder, will balance and sway and slowly raise the foot to slowly and carefully advance it, all of which requires considerable muscular activity. The young girl before mentioned, with hysterical hemiplegia, on first attempting to go up stairs, first advanced the paretic leg one step and then dragged the normal foot up to it. (In organic hemiplegia the patient invariably steps up with the good leg.) When told to step up first with the normal foot, she had equal if not more difficulty in dragging up the bad leg, a movement depending almost entirely on the action of the normal side. Such *bizarrerie* could be seen only in hysterical paralysis. I once saw a young man with traumatic hysteria who was utterly unable to walk in any way except with a painfully long and measured stride.

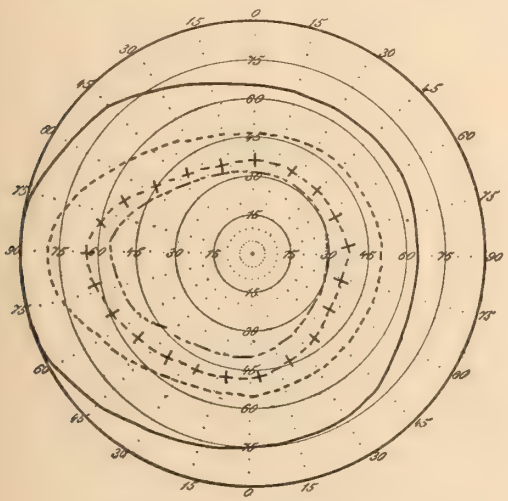


FIG. 20.—Normal fields of vision.
——— = white (form).
— — — — = blue.
— + — + = red.
—·— — — = green.

In 1888 Blocq fully described what he called astasia-abasia. It had been briefly described by Charcot and Richer five years previously, and was noticed by Briquet nearly forty years ago. The essential feature of this syndrome is that the patient can neither stand nor walk, but can execute all movements of the lower extremities with freedom and strength when lying down. The cases are nearly all hysterical, and the affection should never be considered as a nosological entity, as it is simply the exhibition in a high degree of a common trait of hysterical paralysis.

At the request of Dr. F. Henrotin I examined some months ago a young lady who was thought to have received a heavy electric discharge from a lightning stroke. She had peculiar convulsive attacks, and was, besides, unable to stand or walk. An examination in bed found her able to perform all movements with fair strength, and a positive assurance and insistance on my part then sufficed to make her walk. A short time since Dr. Edwin R. Bennett brought to me a gentleman who did not walk well, the trouble dating from an accident some time before. He could not raise the foot perfectly, and the toe caught on rugs, the steps, curbstone, etc. Yet in the recumbent posture he executed every movement with normal freedom and strength. That stamped his trouble as functional. Last May Dr. Kreider, of Springfield, asked me to examine a lady with some obscure trouble of the right ankle joint. A number of months before she had met with an accident in which she was greatly frightened and her feet bruised to some extent. In standing or walking the toe was turned directly out; she could not take a step with the foot in any other position, and it was only with great difficulty that I could rotate the leg so as to point the toe forward. But examined in the recumbent position she not only turned the foot and leg in every direction, but executed these movements against considerable resistance. A single application of the cautery with a positive assurance of its immediate effect caused a marked improvement at once—enabled her to walk with the foot in the natural position. I have heard nothing of her since.

In the same general category belong the patients who can not walk but can climb a tree, or "go on all fours," or jump along with both feet together, or hop on one leg. The exact converse of astasia-abasia has been described—that is, the patient can use the lower extremities for absolutely nothing but standing and walking.* Such disability can be nothing but hysterical.

This peculiarity of a muscle being paralyzed for one purpose and not for another is to be utilized in the examination when hysteria is suspected. Especially are automatic actions to be evoked, as these are the least liable to suffer.

In short, we are to proceed much as we would to detect a simulator in some inconsistency.

Walking is sometimes attended with a sudden, quick jerkiness up and down—a sort of saltatory spasm; but it is irregular in rate and amplitude—choroeiform in type rather than the regular clonic spasm which is occasionally seen in spastic paraplegia.

A sudden giving way of the knees is frequent in hysteria, rare in organic disease, except locomotor ataxia. It also occurs in exophthalmic goître.

Pitres says that ordinary hemiplegics never use crutches

* Babinski. *Soc. méd. des hôp.*, July 8, 1882.

or carry the paretic leg in a sling, while such devices are frequent in hysteria.

A paraplegia or, indeed, any paralysis that shows marked rigidity or contracture within a few days of the onset is hysterical. An old hemiplegia with marked anæsthesia sharply limited by the middle line is hysterical ninety-nine times in a hundred, and if the special senses are affected on the same side the strong probability becomes a practical certainty—a combination of organic hemiplegia with hysteria being excluded.

A striking disparity in the distribution of the paralysis and any concomitant anæsthesia points distinctly to hysteria. For instance, paralysis of an entire extremity with anæsthesia of the distal half only (Fig. 6)—hemiplegia with anæsthesia of both sides. Fig. 1 illustrates a more striking combination—monoplegia, with general anæsthesia and analgesia. Indeed, any case of marked anæsthesia of the entire body is almost sure to be hysterical.

Paralysis of one arm or of one leg, or of arm and leg on the same side, with well-defined anæsthesia of the same members, is not due to a spinal lesion.

Another aphoristic statement that will hold good in this diagnostic question is that an old paralysis without atrophy or marked changes in the reflexes is hysterical. This does not apply to facial paralysis.

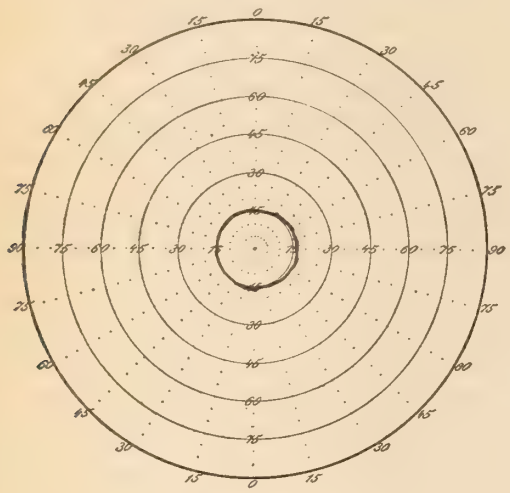


Fig. 21.

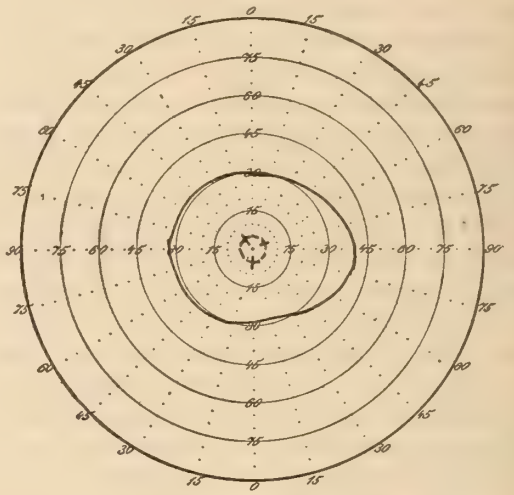


Fig. 22.

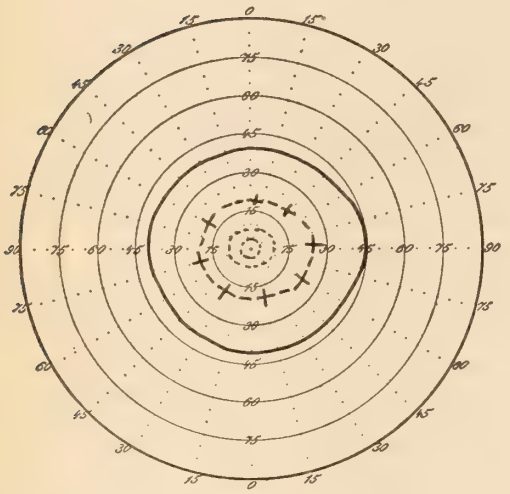


Fig. 23.

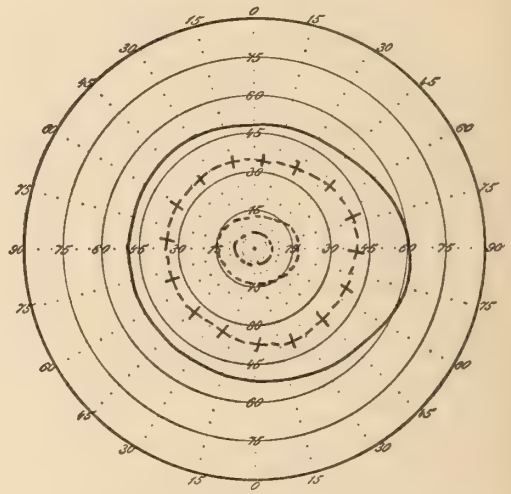


Fig. 24.

Figs. 21, 22, 23, and 24 are all taken (estimated) at different times from the left eye of a patient with hysterical amblyopia, and show very well the different degrees of contraction of the visual fields, as well as the progressive improvement. At Fig. 21 the color fields are wanting—*i. e.*, the patient was color-blind for blue, red, and green, and the field for white is exceedingly small, almost reduced to central vision. At Fig. 22 the field for white is a little larger and red makes its appearance, but only for central vision. At Fig. 23 the field for white is still larger, there is a distinct field for red, although markedly contracted, and there is recognition of blue and green, the latter for exactly central vision only. Fig 24 shows the fields all concentrically contracted with marked inversion of the red and blue fields—*i. e.*, the former is distinctly larger than the latter, whereas in the normal order it is smaller.

In hysterical hemiplegia the face is very rarely, if ever, paralyzed. The accompaniment of facial hemispasm is not quite so rare. These latter cases may simulate a crossed paralysis.

In hysterical weakness of the upper extremity the hand, as a rule, does not flex at the wrist whenever the patient attempts to grasp strongly, as it does in so many organic cases. I have seen this but once in hysteria, and in that case the grasp was just as strong with the wrist fully flexed as it was when I held the hand in extension—a circumstance that could not occur in a purely organic paresis.

Another peculiarity of the hysterical grasp that I have repeatedly observed, but have never seen or heard mentioned, is that the patient grasps almost exclusively with the thumb and forefinger. Now, if the observer places his fingers in the hand of the patient from the ulnar side, allowing them to reach no farther than to the metacarpal bone of the index finger, the patient will be found to grasp with the last three fingers, which were before apparently powerless.

One of the classical stigmata of hysteria is the diathesis of contracture, about which considerable was written some ten years ago, but which is now seldom mentioned in the literature, and which, according to my observation, is rarely sought for, even by neurologists. The condition scarcely merits the name of diathesis, and is simply a tendency to develop a transient contracture from slight causes. During its continuance this contracture resembles in every way permanent hysterical contracture. It is evoked in many ways. The patient, after grasping an object firmly, is unable to relax his grasp at once or until the muscles are gently stroked; repeated percussion of the tendons, traction on the fingers, faradization, and other manœuvres have been employed to produce the contracture, but the most generally efficient means is two or three turns of an elastic band or Esmarch bandage about the extremity. Berbez* in this way demonstrated the condition in fifty-two out of seventy confirmed hysterics. I have seen the symptom only a very few times, but I must confess that I have not often examined for it. The patient from whom Figs. 12 and 13 were taken (a hemiplegic with extreme hyperæsthesia and rigidity in extension of the affected limbs), on being carried into the hospital, developed a contracture of the right (unaffected) hand which drew the fingers into much the same position as that produced by the spasm of tetany. This contracture, which was very rigid, passed off within an hour, but we can easily realize that, in accordance with what has been taught by Charcot, had the cause persisted, this temporary tonic spasm would have passed on into a permanent hysterical contracture. In other words, the diathesis of contracture is the as yet latent proneness of part or parts of the muscular system to take on this peculiar form of spasm, and if this be artificially produced an objective symptom of hysteria is elicited. The only other diseases to be considered in the diagnosis would be Thomsen's disease, tetany, and ordinary muscular cramp, with possibly some of the occupation cramps—affections which would present but little diagnostic difficulty.

The more permanent contracture is found of all degrees, but in old and very persistent cases it is ordinarily very marked—more pronounced and unyielding than that due to organic nervous disease. Contrary to what we might expect, the latter relaxes more during sleep than does the former, and, as is well known, it is ordinarily somewhat improved after a good night's rest. Bad hysterical contracture persists unabated during sleep, is not relieved thereby, and requires the deepest narcosis to produce relaxation. Contraction of organic origin, on the other hand, does not disappear under an anæsthetic. Exsanguinating an hysterically contractured extremity by the application of an Esmarch bandage will sometimes cause the contracture to disappear, as may also pressure on an hysterogenic zone or painful point, or on any indifferent point coupled with a positive assurance as to the result. These hysterical contractures may produce deformities precisely like those the result of various injuries, and the diagnosis of such cases is the more important as they are peculiarly liable to follow traumatism. Furthermore, as Charcot has shown, the application of bandages to a patient with the diathesis of contracture may serve to develop a permanent contracture that is purely hysterical, but which may be attributed to the injury for which the bandaging was done—for instance, a fracture or dislocation. When this functional contracture (or perhaps it were better called contraction) has existed for a long time, organic changes may take place in the muscular, tendinous, and circumarticular structures which do not yield during anæsthesia and can not be cured by curing the neurosis, but which require operation.* One

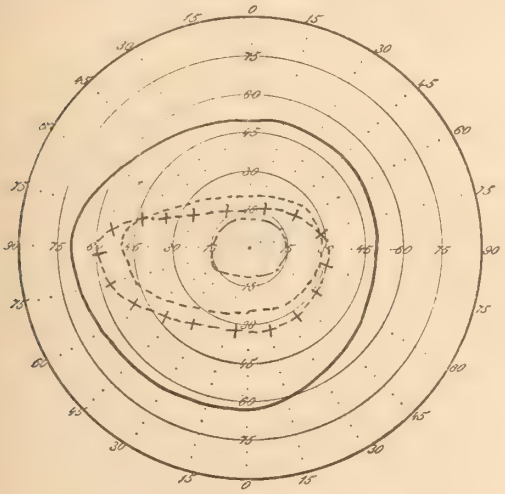


Fig. 25.—Right eye.

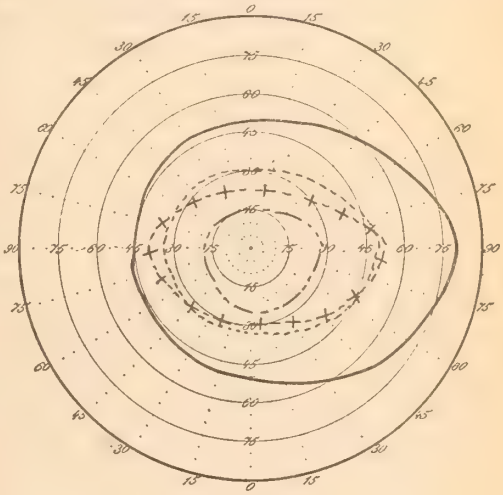


Fig. 26.—Left eye.

* *Prog. méd.*, October 9, 1886.

* Charcot, *Leçons du mardi*, 1888–'89, p. 542; Terrillon, *Nouv. iconographie de la Salp.*, vol. i, p. 93. This is the accepted teaching,

of the peculiarities of hysterical contracture of the lesser degrees is that it yields to passive motion irregularly by steps or jerks, the tension varying suddenly. Sometimes an attempt to overcome it causes a marked, coarse tremor and occasionally a decided increase in the tension, a contracture of moderate degree suddenly becoming absolute. The degree of contracture is not affected by change of position of the extremity; for example, fingers strongly contracted into the palm are not in a measure relaxed by strong flexion of the wrist. These signs are all contrary to what is found in organic contracture. Contracture immediately following a fit is hysterical, as after attacks of idiopathic epilepsy there is a general relaxation and following Jacksonian fits a localized weakness.

It may be a matter of surprise to some that the symptom-complex of hysteria may so closely resemble that of locomotor ataxia as to confuse the diagnostician, but hysterical pseudo-tabes has frequently been observed and described,* and to this category, if not to hypochondria or simulation, are to be referred all the instances of remarkable cure of locomotor ataxia by charlatans and others.† The hysterical affection may present the typical ataxic gait of tabes with marked disturbances of co-ordination, lightning pains, gastric crises, girdle sensation, vesical and rectal trouble, visual difficulties, and loss of the muscular sense. In short, hysteria may duplicate this particular organic disease in all the more prominent motor and sensory symptoms, but the Argyll-Robertson pupil has never been observed, and with three exceptions the knee-jerk has been preserved. In Ferré's case it was temporarily absent, in one of the cases of Souques (not observed personally by him) it was wanting, as it was also in the remarkable case of Petit, which is said to have been pronounced tabes by Charcot, Ball, Féréol, Sée, Dujardin-Beaumetz, and other prominent physicians, and was cured by a pilgrimage to Lourdes. The patient reported by Souques was also the subject of exophthalmic goître, which might account for the absence of the patellar tendon reflex, as Marie and Maude * find it frequently abolished in this disease.† Of course, the more severe symptoms of tabes—optic atrophy, arthropathies,

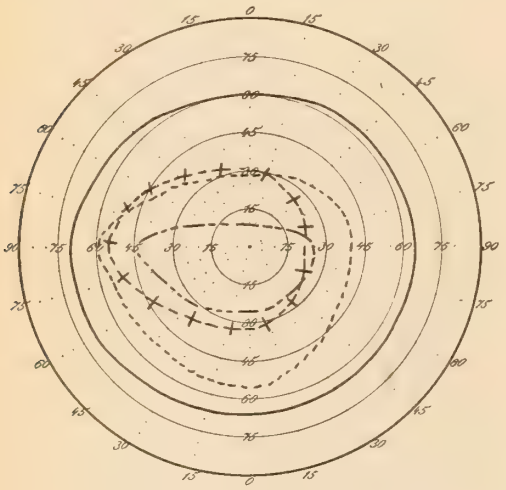


Fig. 27.—Right eye.

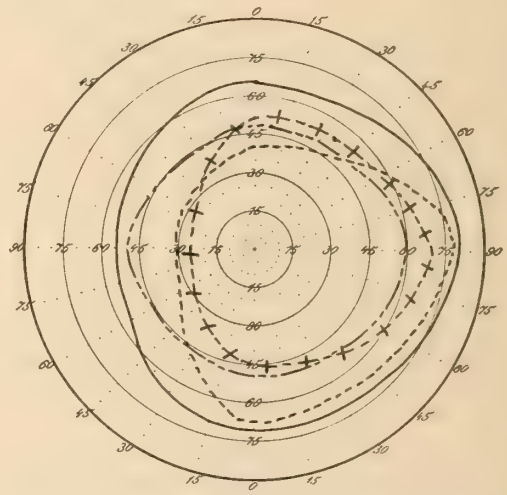


Fig. 28.—Left eye.

and spontaneous fractures—make up no part of hysteria, and analgesia of the ulnar trunk, recently described by Biernacke ‡ as a symptom of tabes, would certainly be missing in the hysterical affection unless there were marked anæsthesia of the entire extremity, which does not occur in tabes unless it be in the most advanced stage. The inco-ordination in the hysterical cases may be much more aggravated by closure of the eyes than it is in the tabetic ones, and often the hysterical patient, if he attempt to stand with the eyes closed, will fall invariably in the same direction (not rarely this direction is toward the observer) and as one rigid piece, like a falling pillar, or the acrobats who mount on each other's shoulders and then fall forward together until near the floor. In accordance with what was said regarding astasia-abasia, the inco-ordination of hysteria may disappear under certain conditions; for instance, in the recumbent posture, which would, of course, settle any doubt as to its nature. In *résumé*, we may say that the diagnosis will rest principally upon the ab-

but I am forced to believe that the organic changes are not due to the hysteria, nor simply to the prolonged contracture, but directly to organic disease (rheumatism, arthritis, traumatism, etc.), which was the exciting cause of the hysterical affection or occurred independent of it. But it is rational to suppose that prolonged fixation might aid materially in the production of ankylosis by this organic affection.

* Pitres. *Arch. de neurol.*, 1886, p. 337; *Gaz. méd. de Paris*, September 20, 1890; *Leçons sur l'hyst. et l'hyp.*, Paris, 1891, vol. i, p. 465.—Webb. *Am. Jour. of the Med. Sci.*, 1876, p. 119.—Leval-Picquechef. Des pseudo-tabes. *Thèse de Paris*, 1890.—Lecorché et Talamon. *Études méd. faites à la maison Dubois*, Paris, 1881, p. 550.—Michaut. Contrib. à l'étude de l'hyst. chez l'homme. *Thèse de Paris*, 1890.—Mader. *Wien. med. Presse*, 1885, p. 143.—Souques. Étude des syndromes hyst. simulateurs, etc. *Thèse de Paris*, 1891, p. 129.—Rendu. Accidents hyst. à forme pseudo-tabet. *Jour. de méd. et de chir. prat.*, 1891, p. 513.

† *Arch. de neurol.*, October, 1895, p. 347.—Kowalewski. *Centralbl. für Nerv.*, August 1, 1885.—Rockwell. *N. Y. Med. Jour.*, 1881.—Hurd. *Boston Med. Jour.*, 1877.—Védrème. *Soc. de chir.*, 1878.—Petit. *Annales de Notre Dame de Lourdes*, twenty-second year, parts 8, 9, and 10.

* *Brain*, 1894, p. 229.

† This finding, however, does not accord with my experience.

‡ *Neurolog. Centralbl.*, April 1, 1894, and June 15, 1894.

sence of the eye symptoms of tabes and the presence of the knee-jerks and of positive evidences of hysteria. Ordinarily the diagnosis will not be difficult if the patient be carefully examined, for although hysteria may present some of the prominent symptoms of locomotor ataxia, especially incoordination, the tabetic picture is never complete, and there are present besides symptoms not pertaining to this disease. But it is not to be forgotten that a hystero-tabetic combination is not very rare, the presence of tabes by no means excluding hysteria, nor the neurosis excluding the organic disease.

The following diagnostic table of ocular symptoms is from Charcot:*

	Tabes.	Hysteria.
Motor apparatus of the eye.	Paralysis from lesion of a motor nerve of the eye (bulbar or peripheral; consequent diplopia).	1. Sometimes associated paralysis. 2. Blepharospasm. 3. Monocular diplopia; micropsia and macropsia.
Pupillary disturbances.	Argyll-Robertson pupil.	
Optic disc.	Atrophy.	
Symptoms due to affection of the optic nerve or visual centres.	1. Irregular concentric contraction of the visual fields. 2. *Tabetic* achromatopsia or dyschromatopsia, affecting first green and red, yellow and blue being preserved to the last. 3. Progressive blindness.	1. Regular concentric contraction of the visual fields. 2. Dyschromatopsia from simple contraction of the visual fields for colors. Frequently perception of red alone persists. 3. Transitory amblyopia or amaurosis.

In connection with the special senses and some other highly specialized functions there are important symptoms characteristic of hysteria that, for the sake of brevity, may be presented in a rather conglomerate group. Of these, probably none is more frequent or important than a concentric contraction of the field of vision, especially for colors. Fig. 20 represents average normal fields, although those for colors are not rarely larger than represented. In hysteria there may be a simple contraction of all the fields, the order of size remaining unchanged; one or more fields may be contracted, the others remaining normal; there may be concentric contraction with inversion of the color fields; for instance, the field for red may be larger than that for blue, or the color fields may be so contracted that they disappear entirely or in part, constituting partial or complete achromatopsia. When one color only shows a contracted field it is generally green, and red is almost always the last color to disappear. Figs. 22 to 29, taken from cases examined within the last year, illustrate the various kinds of hysterical fields. With a moderate contraction the visual acuity is ordinarily not affected, but when the field is very much reduced for form I have generally found some amblyopia. Instead of a distinct inversion of the color fields an irregular overlapping is often found, as shown in Figs. 25 to 28. Contraction of the visual fields is by no means constant in hysteria, but it is frequent, and may be found in mild cases and in those in which eye symptoms apparently form no part of the expression of the disease. I saw some days ago a case of "weak back" with lumbar pain from supposed "spinal trouble" which showed as stigmata only the shifting of tender points, before spoken of, and a concentric contraction of the visual field for green. A few applications of static electricity with (additional) proper mental treatment relieved all the symptoms, which had been of long duration. A few days later another case was sent to me by Dr. Rumpf, in which the principal complaint was of "fainting spells." Examination showed a distinctly contracted field for green, and search revealed a hysterogenic zone, pressure on which produced one of the aforesaid "spells," which proved to be a typical hysterical attack.

Janet has shown that in hysteria when the visual field is practically normal a contraction may often be induced by causing the patient to concentrate the attention more strongly on the central fixation point.

The abnormal fields of vision of organic disease very rarely present this regular concentric contraction, but fields

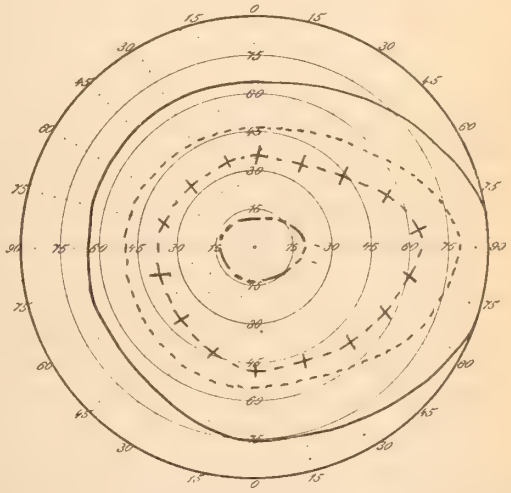


Fig. 29.—The fields for white, blue, and red are normal; that for green is decidedly contracted.

of hemiopic type or an irregular concentric contraction with re-entering angles. Occasionally optic atrophy causes a rather regular contraction of the fields with dyschromatopsia, but there is also markedly impaired central vision; red is among the first colors to disappear instead of the last, and an ophthalmoscopic examination at once reveals the source of the trouble. A regular contraction of the fields has been found after epileptic fits, but it is transient, and continued contraction in epileptic subjects is probably always due to coincident hysteria. Charcot taught that a lesion of the posterior part of the posterior limb of the internal capsule caused, with the hemianæsthesia, a concentric contraction of the field of vision, but in this he was probably mistaken; at least the instances of such contraction belong to clinical curiosities.

A peculiar characteristic of the contracted field of hysteria is that it does not ordinarily interfere with getting about and customary pursuits. The patient does not collide with objects lying without his visual field but within the normal, the result being that, as in cases of hysterical anæsthesia, the patient is often not aware of his sensory

* *Leçons du mardi*, 1888–'89, p. 163.

defect; it must be sought for.* This freedom from disability does not occur in contraction from organic disease, although binasal or bitemporal hemianopia may exist without the knowledge of the patient. According to Gilles de la Tourette,† in hysteria with markedly contracted fields and amblyopia there is frequently anæsthesia of the conjunctiva and eyelids, but I have rarely found it. It must be borne in mind that a comparative insensitiveness of the ocular conjunctiva is not at all rare in healthy individuals. (It has seemed to me more frequent on the nasal side.) The head of a pin may often be lightly tapped against the eyeball without causing inconvenience or reflex nictitation. In hysterical amblyopia visual acuity is said to suffer less than luminous perception, while the reverse holds good in optic atrophy, but I have no personal experience regarding this symptom, and think the routine examination for it would scarcely be profitable, although the charts of De Wecker make such an examination easy and probably sufficiently accurate. Hysterical hemianopia and central scotoma have been observed, but are exceedingly rare.

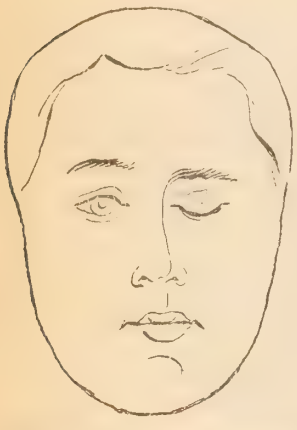


Fig. 30.—Spasmodic ptosis, hysterical.

Fig. 31.—Paralytic ptosis, organic.

Eye symptoms that are met only in hysteria, as a rule in connection with amblyopia and contracted fields, are diplopia or polyopia monocularis, macropsia, and micropsia. They are frequently only to be found by examining at different distances, in different directions, and in different parts of the visual field. An object that is seen single at one foot may be seen double or triple at three or five feet; one that appears of normal size at three feet may apparently increase in dimensions as the distance increases. I have examined one case in which a diplopia of the right eye was present only when the patient looked to the right.

Hysterical strabismus is rare, always spasmodic—never paralytic—and not infrequently associated with palpebral spasm. The ordinary tests of the field of fixation and inclination of the images, as well as the administration of chloroform, which relaxes this as it does all hysterical spasm, will serve to distinguish the spasmodic from the paralytic form.

To Parinaud we are indebted for the investigation of hysterical spasm of accommodation. It may be so pronounced as to make all objects indistinct except at a certain distance. One of his patients, for instance, required convex glasses of two dioptres for reading and concave glasses of the same strength for distance.

There is an hysterical ptosis, aside from the more common hysterical blepharospasm, from which it differs, in my opinion, principally in degree, as it is really spasmodic and not paralytic. It may be painful or non-painful; in the former case apt to be accompanied by hyperæsthesia, and in the latter by anæsthesia. Figs. 30 and 31, taken from Charcot,* show one of the characteristics of the hysterical as distinguished from the organic affection—viz., a depression of the eyebrow corresponding to the drooping lid.

Nystagmus is never a symptom of hysteria, although occasionally a few nystagmoid jerkings may occur in extreme abduction in this as in a number of other nervous affections, and indeed in normal individuals.† I have, however, seen one case in which a spurious nystagmus occurred on convergence, but the movements were jerkier in rhythm and smaller in excursion than true nystagmus—more like tremor.

We are not to forget that a disturbance of vision purely hysterical may be superimposed on organic disease of the eye.‡

Hysterical disturbances referred to the ear are far less frequent than those involving the eye, but hysterical tinnitus and deafness have been repeatedly observed. The latter is unilateral as a rule, and, as in hysterical uniocular amaurosis it can often be demonstrated that the patient sees with the blind eye,# so in unilateral deafness it may be shown that the patient unconsciously uses the deaf ear; that is, deaf to all ordinary tests. The patient does not carry the head to one side nor instinctively turn the good ear toward the source of sounds. As might be expected, the deafness is as pronounced for bone as for aerial conduction. The possibility of hysterical deafness complicating organic ear disease is not to be lost sight of. ‖

In addition to the more ordinary hysterical disturbances of the sense of taste, hemiageusia being the most frequent, Lichtwitz△ has observed a "contraction of the field of taste" analogous to the contraction of the field of vision. Only one or two of the ordinary test substances (sweet, salt, sour, bitter) could be recognized, or they were recognized only on part of the tongue, the posterior third retain-

* For ordinary rapid work, when a chart is not prepared, I do not use a perimeter, but simply a pocket color-carrier by means of which the fields for form, blue, red, and green may be estimated with sufficient accuracy in about two minutes. See *New York Med. Journal*, April 27, 1895.

† *Nouv. iconog. de la Salpêtrière*, 1889, p. 107.

* *Clinique des mal. nerv.*, vol. i, p. 325, Paris, 1892; *Arch. de neurol.*, vol. xxi, p. 338.

† Schultze. Ueber die Friedreich'sche Krankheit, etc. *Deutsche Zeitsch. für Nerv.*, Bd. v, pp. 27 and 103.

‡ Parinaud. *Arch. de neurol.*, 1889, p. 447.

More strange than this, I have seen one case in which there was absolute achromatopsia of either eye when examined alone, but good recognition of colors when both eyes were used. Such a condition could be nothing but hysteria or simulation.

‖ Habermann *Prag. med. Wochensch.*, 1880, Nos. 22, 23, and 24.

△ Les anes. hyst. des muqueuses et des org. des sens, etc. *Thèse de Bordeaux*, 1887.

ing its function the longest. The presence of this symptom must be affirmed with caution, as acuity of taste varies enormously in different individuals.

Hysterical aphonia is caused, as is that of organic disease, by a failure to perfectly approximate the vocal cords. With local disease of the larynx it can scarcely be confused, as all subjective and objective signs of inflammation, tumor, etc., are wanting. The exclusion of organic paralysis may be more difficult, but the mode of onset, vacillating course, sudden disappearance, with perhaps sudden relapse, the influence of emotion, the lack of other signs of organic disease, and the presence of those indicative of hysteria, will generally establish the diagnosis. In accordance with what has been said of hysterical paralyses, the subject may be able to sing or cough with a loud voice, or to talk during sleep. The hysterical disability is always bilateral; paralysis of one vocal cord is positive evidence of organic mischief. Hysterical paralysis of the abductors of the larynx is a medical curiosity.

Besides aphonia, mutism, and stuttering, which are not rare, hysteria sometimes causes aphasia. I saw a striking instance in the clinic of Ballet. The aphasia had come on suddenly, following mental shock, and was accompanied with a hemiplegia of the right side. One of the distinguishing traits of the hysterical affection is its purity of the motor type. Purely motor aphasia from organic disease is of rare occurrence; a careful and intelligent examination will nearly always reveal some degree of mind blindness, mind deafness, agraphia, etc. In hysterica aphasial they are the great exception. I know of but one case of hysterical aphasia with agraphia.* In organic aphasia the patient is nearly always depressed, worried, exasperated by his condition, and prone to tears; not so the hysteric. Hysterical aphasia generally occurs in younger subjects than that of organic origin and is apt to be complicated with aphonia, stuttering, or other difficulty in articulation.

As a knowledge of hysteria has increased in breadth and exactness, some symptoms currently but erroneously supposed to exclude this neurosis or, to speak more accurately, to be due only to organic disease, have been added to its semeiology.

One of these is ankle-clonus.† But the clonus of hysteria is not exactly the same as that of organic disease. I have taken the rate of oscillation in a number of cases and find that of organic clonus to be about six to the second, occasionally somewhat more rapid,‡ while the hysterical clonus varies from three and a third to four and a sixth, or possibly as high as five to the second. Not only does the hysterical clonus vary in different cases between these wide limits, but, what is distinctive, it varies greatly in the same case, and of even greater importance is the fact that it vacillates greatly during the course of the same test. For instance, as the foot is flexed, the oscillations may start at the rate of two hundred a minute, quickly increase to two hundred and eighty a minute, and as they die away fall even below two hundred. At the same time the amplitude of the excursions is very irregular; at different moments of the same test it will vary even two or three fold, while in organic clonus it is constant. Gowers * says that the clonus of hysteria does not begin immediately on bending the foot back, but starts only after an appreciable interval. This delay I have not found constant, although frequent. But it is certainly true that the muscular contractions in the hysterical cases have not the prompt, shocklike character found in organic disease, and give the impression of semi-voluntary movements. I have not made tracings, but should expect the apex of the "hysterical" curve to be much broader and more irregular than that of the "organic."

The occurrence of facial paralysis, strabismus, central scotoma, and hemianopia, for a long time supposed to arise only from organic disease, has already been alluded to. Loss of pupillary reflex to light may also occur as a symptom of hysteria.† Retention of urine and polyuria are common in hysteria, while suppression or marked diminution of the urinary secretion, as well as incontinence, are generally regarded as infallible signs of organic disturbance; still they do occur as symptoms of hysteria.‡ Loss of sexual desire and power may also be due to hysteria. I have had such a case recently under observation. Muscular atrophy from hysteria has been described, and cases have been reported in which there was diminished electric reaction and even reaction of degeneration, but we are here upon ground that is still debatable, and the decision turns upon cases few in number and bizarre in the extreme. Reaction of degeneration can certainly not occur without organic change of a certain rapidity in the nerve and muscle fibre, and whether such change can be produced by hysteria alone must be considered very doubtful.

It seems unnecessary to state that, to a certain extent, elevation of the temperature and, to a very marked degree, increase of pulse and respiration may be due to hysteria. Subnormal temperature, pulse, and respiration are more exceptional, but do occur.

In conclusion, I would venture to caution against drawing diagnostic conclusions from negative therapeutic results. Because a convulsion is not controlled by the ordinarily efficacious cold douche is no reason for declaring it to be epileptic. Because a paralytic woman does not walk on being imperiously commanded to do so, her affection is not necessarily organic. The utter failure of suggestion in deep hypnosis does not in the least militate against the diagnosis, hysteria. A given case may pass uninfluenced through many modes of treatment, all more or less impressive, all undertaken with hope, or even apparently absolute faith, on the part of the patient, and the case still be one

* Ballet. *Rev. de méd.*, June and July, 1893. Since this was written I have seen a reference to an additional case, but am not now able to find it.

† I have even seen glutæus-clonus in a case of traumatic hysteria.

‡ Gowers says six to nine to the second, but I have not found it so fast as indicated by the second figure.

* *Diseases of the Nervous System*, vol. ii, p. 996.

† I have seen a case since writing this.

‡ Gilles de la Tourette. *Traité de l'hystérie*, vol. iii, p. 378.—Levy. *Arch. de neurol.*, January, February, March, 1895.

of hysteria, pure and simple, and amenable, moreover, to appropriate mental treatment.

Venetian Building.

ORGANIC HEART LESIONS COMPLICATING PREGNANCY.

By J. A. WESSINGER, M. D.,
ANN ARBOR, MICH.

The author desires to report two cases in which the lesions indicated in the title of the article resulted fatally—in one case during the second stage of labor, and in the other, ten days after the completion of a twin delivery.

Case I.—In the spring of 1882 I was called about seven miles in the country to see a woman, aged twenty-five years, who was in labor with her second child. About one month previous to this date this patient consulted me as to her condition, and for the purpose of securing my services at confinement. Examination of the chest brought out a well-marked mitral insufficiency; there was a right pulmonary apex consolidation, with some dyspnœa. The lower limbs were œdematous and there was albumin in the urine. I informed the husband of my grave prognosis, ordered the patient placed upon a milk diet with laxatives, and fortified the heart by such means as were at the command of the physician at that date. On arriving at the bedside I found the patient recumbent. The pains were not severe, but had continued about twenty-four hours. The os was dilating, the head presenting in the first position at the superior strait. This continued for two or three hours, the os in the mean time becoming more dilated. The membranes ruptured and the head descended toward the inferior strait. At this juncture, when in the very midst of seeming normal labor, the patient suddenly gasped, drew a deep breath, became cyanotic, and was dead! I was not permitted to make a post-mortem.

Case II.—This patient first came to my notice on January 10, 1892. Examination revealed a very loud and long cardiac murmur near the apex. Dyspnœa was not extreme; the respiratory distress seemed rather that of an asthmatic than one suffering from cardiac lesions. The woman was a German by birth, aged thirty-one years, and had two children living—one four years old, healthy; one two years old, which I have since treated for morbus coxarius. No history of rheumatism could be elicited. The patient had a younger sister who was a confirmed asthmatic. During the examination I also ascertained that the patient was in the ninth month of her third pregnancy. She was placed under suitable treatment and the husband admonished of the serious nature of the case, and ordered to call me immediately on the approach of labor. At midnight of January 25th I responded to the summons and found the woman in labor. Os dilated, head engaging in inferior strait, pulse fairly regular but small. I gave one twentieth of a grain of strychnine sulphate by the mouth, then proceeded, under chloroform and with the aid of forceps, to deliver as rapidly as possible. All went well and the woman presented us with twin babies at 2 A. M. Both infants were in extreme inanition. No untoward symptoms presented themselves until the beginning of the third day, when the patient became markedly icteric, pulse more feeble and irregular, marked dyspnœa, and complete anorexia, also some œdema of the lower limbs and of the face. All treatment brought to bear upon the case seemed of no avail. At this time I also found an enormous doughy mass in the right side of the patient's abdomen filling the whole right hypochondriac, the right lumbar, part of the epigastric, the umbilical as far as the navel, and dipping well down into the right inguinal region.

While the general outline of this mass could be detected, yet it was at no point well defined. On February 1st I called Dr. William F. Breakey, of this city, to my aid as counsel in the case. The extreme condition was at once apparent to my consultant, and our combined efforts were then directed to the patient's heart. We concluded that the condition in the right abdomen was either an enormously enlarged liver or a subperitoneal effusion, or probably both. I passed an exploring needle, but there was no response, except a drop or two of dark blood. The patient gradually sank, and death took place on February 5th, eleven days after date of delivery.

Twelve hours after death we began the autopsy, in which I was ably assisted by Professor George Dock, of the University of Michigan, Dr. William F. Breakey, and also Dr. James Breakey. The lungs were found œdematous. The mitral orifice of the heart was in an extreme state of annular stenosis, the valves being well-nigh obliterated. The mass in the right abdomen was found to be an enormously enlarged liver, microscopic sections of which proved it to be of the nutmeg variety.

The uterus was empty, somewhat fatty, and in subinvolution. The macroscopic appearance of the kidneys was not far from normal; no microscopic examination of these organs was made. The intestines were hyperæmic. The brain and stomach were not examined. One of the infants died on the fourth day after birth and the other on the fifth. Both presented a markedly icteric condition, and both were in extreme inanition at death. No autopsy was had upon the infants.

I believe now that in Case I, had we resorted immediately to anæsthesia and the aid of forceps, the delivery could have been completed and a living child brought into the world, even though speedy death of the mother might have resulted shortly after confinement. The author desires briefly to reiterate what seems well established by the most recent authorities upon this subject:

1. If the kidneys show evidence of disease, then anæsthetize with *chloroform*, dilate as rapidly as possible, apply the forceps, and deliver the patient.

2. If there is no renal involvement, use *ether* as the anæsthetic, and proceed the same as before. What must be emphasized is *to terminate the labor as speedily as possible.*

3. If the patient is seen before term, and grave symptoms have made their appearance, then, with the consent of herself and husband, and the concurrence of a physician in council, induce premature labor, because each week that the patient continues in the pregnant state places her life in greater jeopardy, and, as has been well said,* "if then the case ends fatally, you can console yourself with the belief that the woman succumbed *not through*, but *in spite of*, premature labor."

It would, no doubt, be interesting to have information upon the mortality rate and the cause of death among infants who are the offspring of mothers suffering from organic heart lesion.

---

* Rosenberger. *N. Y. Med. Jour.*, vol. lxiii, p. 78.

BICYCLE-RIDING UPON IMPROPERLY FITTING SADDLES AS AN ÆTIOLOGICAL FACTOR IN PROSTATITIS AND STRICTURE OF THE URETHRA.

By WILLIAM WARREN TOWNSEND, M. D.,
RUTLAND, VT.,
GENITO-URINARY SURGEON, VERMONT STATE HOUSE OF CORRECTION.

Bicycle-riding with the common saddle, such as is sold with most wheels, causes a disease of the prostate and urethra the severity of which is in proportion to the amount ridden and the relation of the buttocks and perinæum of the rider to the saddle.

This is a subject which I have studied considerably, having been led to do so by the number of patients coming to me with prostatic and urethral irritability who denied venereal history. This denial in some subjects must be accepted *cum grano salis*, but there have been some under my observation whose honesty was beyond question.

The prostate, lying as it does in the perinæum, being covered only by the perineal fascia, fat, skin, and rectum (sometimes loaded with hardened fæcal masses to add to the trouble), is exposed to concussions, and these are inflicted by saddles which fit the perinæum, and upon which a small portion of the buttocks rests.

E. F. H., bookkeeper, was referred to me by a physician who had been treating him for an irritability of the urethra, principally the membranous. Endoscopic examination of the bladder was negative. The prostatic urethra presented the caput gallinaginis swollen, the mucous membrane livid, velvety, and sensitive to pressure. The membranous portion was swollen, and exhibited a few small erosions; the bulbous contained numerous granulations. By rectal palpation and other physical and rational symptoms, a diagnosis of chronic parenchymatous prostatitis and granular urethritis was made, and a cause looked for. Venereal history was denied absolutely. Upon questioning him closely, I found that he rode a bicycle to excess, riding forty and fifty miles at a trip. After such a ride, the only inconveniences that he experienced were frequency of micturition and dysuria. Examining the saddle used by my patient, and placing him on it in the position such as he would assume when riding, I found him to be resting the entire weight of his body on the perinæum, the buttocks merely resting upon the back part of the saddle.

It is needless to say that I considered this the cause of the prostatic trouble, and at once interdicted the use of the wheel, and treated the trouble, which yielded readily.

This case is merely an illustrative one; I have had a number of others presenting the same symptoms and due to the same causes—*i. e.*, excessive bicycle-riding on improperly fitting saddles. When we consider the structure of the prostate gland, being as it is made up of delicate glandular and muscular tissue, is it not surprising that not more cases of prostatitis occur? What would be the outcome if the testicle was in the position of the prostate, and received the same amount of concussion—would not orchitis be the result?

Gonorrhœa is by some authors considered to be the only ætiological factor of prostatitis, the gonococcus passing from the deep urethra into the glands and ducts, and setting up an inflammation hard to cure. Cold, damp, venereal excess, and old strictures are said to be occasional causes. In reviewing the literature, the only mention I can find of traumatism to the perinæum being an ætiological factor is that made by Dr. W. T. Belfield in his contribution to Morrow's *System of Genito-urinary and Cutaneous Diseases*. He states: "Injury to the perinæum (horseback and bicycle riding) seems a possible cause."

It has been my experience so far to have seen more cases due to the bicycle than to "cold and damp." In regard to those patients who have never used the wheel, and give a history of having caught their trouble from sitting on a cold stone or damp grass, and their veracity has been questionable, I should be inclined to believe that the gonococcus was present at the *tête-à-tête*, and found its way into the fossa navicularis, whence it had traveled posteriorly. I have used the wheel, and consider its use to be a most healthful exercise when taken in moderation and upon an anatomical seat. Such a seat so far I have never seen, so I can not be credited with having the interest of any manufacturer at heart.

It is out of the province of this paper to speak of the injury that is being done daily to our growing girls by the saddles now in use by them, but I can not allow an opportunity to pass without condemning bicycle-riding for womankind until a proper saddle is devised.

When we consider the condition of the bulbous and membranous urethræ as discerned by the endoscope, is it not more than likely that stricture should follow in some of these cases? Stricture is always preceded by urethral inflammation, and if the mucous membrane becomes damaged sufficiently to allow of the escape of urine into the submucous tissue, plastic material is laid down to repair the injury, and by its cicatrization and contraction produces a perceptible diminution in the expansibility of that portion of the urethra, and stricture results.

Now these cases of contusion and concussion by the see-saw motion of the body over the hard horizontal bar (saddle), producing the congested urethra, offer a fertile soil for the formation of a stricture.

SEPTICÆMIA FOLLOWING DIPHTHERIA; TREATMENT BY STREPTOCOCCUS ANTITOXINE; RECOVERY.

By J. E. KELLY, M. D.,
SURGEON TO CHARITY HOSPITAL.

The following case is interesting, owing to its ætiology, its treatment, and its termination:

J. B., aged twenty-one years, a printer by occupation, was first seen on August 6, 1895, when he was suffering from diphtheria. The case was typical, and ran an ordinary course until the disappearance of the false membranes. On August 20th an erysipelatous eruption appeared on his face in the vicinity of the eyes and cheek; at the same time he complained of pains and stiffness in the trunk, arms, and legs. His temperature was only 99·5° F., but his pulse was in the vicinity of 150. The cranio-cervical glands, particularly on the right side, became enlarged, giving the patient

the appearance of goître, and causing well-marked dyspnœa. Subsequently dense, œdematous swelling occurred in all the limbs, rendering passive motion impossible, and causing severe pain.

The patient was evidently suffering from streptococcous infection of the gravest type, and, not having improved, notwithstanding a week's skillful medical treatment, the writer, who saw him in consultation, recommended his removal to a hospital and the streptococcus antitoxine as a final procedure, owing to the encouragement afforded by the recent reports of Marmorek, Pozzi, Dieulafoy, Gromakowsky, and others.

On August 27th he was admitted into the Gouverneur Hospital. His throat was œdematous, his voice thick, and his tongue swollen, there were sordes on his teeth and lips, which latter were dry and cracked, the pupils were dilated, and prostration was marked. Temperature, 100·2° F.; pulse, 134 and irregular; respiration, 32. The urine showed no albumin or sugar, but was alkaline in reaction, with a specific gravity of 1·030.

An ample supply of Gibier's streptococcus antitoxine was obtained from the New York Pasteur Institute, and at 11.45 P. M. the first injection was given, the dose being twelve cubic centimetres of antitoxine, to which was added an equal quantity of normal salt solution.

A condensed report of the subsequent course of the case follows:

	Temperature.	Pulse.	Respiration.	
Aug. 28th: A. M.	100·4°	128	24	
P. M.	100·0	110	22	Second injection of antitoxine.
Aug. 29th: A. M.	100·0	124	20	Third injection of antitoxine.
P. M.	101·0	118	26	
Aug. 30th: A. M.	100·4	118	24	
P. M.	100·2	108	28	Fourth injection of antitoxine.
Aug. 31st: A. M.	100·0	110	30	Fifth injection of antitoxine.
P. M.	100·2	110	28	
Sept. 1st: A. M.	99·6	112	20	Urine alkaline, sp. gr. 1·018; no sugar or albumin.
P. M.	100·4	116	22	
Sept. 2d: A. M.	100·0	104	20	Sixth injection of antitoxine.
P. M.	101·8	120	22	
Sept. 3d: A. M.	99·8	104	24	
P. M.	99·0	118	24	
Sept. 4th: A. M.	99·8	108	24	Seventh injection of antitoxine.
P. M.	100·0	102	24	
Sept. 5th: A. M.	101·0	105	21	Eighth injection of antitoxine.
P. M.	99·8	102	22	
Sept. 6th: A. M.	100·0	96	24	Ninth injection of antitoxine.
P. M.	100·4	104	16	
Sept. 7th: A. M.	98·6	108	18	
P. M.	99·2	96	16	
Sept. 8th: A. M.	99·4	100	24	
P. M.	99·8	102	20	
Sept. 9th: A. M.	99·2	96	20	
P. M.	99·0	96	16	
Sept. 10th: A. M.	98·0	96	24	
P. M.	98·4	88	18	
Sept. 11th: A. M.	98·8	88	20	Tenth injection of antitoxine.
P. M.	99·6	100	20	
Sept. 12th: A. M.	98·0	102	20	Eleventh injection of antitoxine.
P. M.	101·6	108	24	
Sept. 13th: A. M.	99·2	108	28	Twelfth injection of antitoxine.
P. M.	99·0	108	18	
Sept. 14th: A. M.	98·0	90	26	
P. M.	98·2	90	20	
Sept. 15th: A. M.	98·4	84	14	Urine acid, sp. gr. 1·029; no sugar or albumin.
P. M.	97·8	90	20	
Sept. 16th: A. M.	98·0	87	15	
P. M.	98·6	78	16	
Sept. 17th: A. M.	99·6	88	24	
P. M.	98·4	88	20	
Sept. 18th: A. M.	97·6	86	18	
P. M.	99·2	96	18	
Sept. 19th: A. M.	96·4	84	20	
P. M.	98·6	86	18	
Sept. 20th: A. M.	98·4	72	16	
P. M.	99·8	94	16	
Sept. 21st: A. M.	99·2	92	16	
P. M.	99·0	96	16	
Sept. 22d: A. M.	98·0	86	20	Urine acid, sp. gr. 1·020; no sugar or albumin.
P. M.	99·2	94	16	
Sept. 23d: A. M.	98·2	90	18	Discharged.

In all, twelve injections of antitoxine were given. The following abstract shows the effect of each upon temperature, pulse, and respiration, as will be seen by reference to the foregoing record:

After first injection, reduction of temperature, pulse, and respiration, subsequent rise of pulse; after second injection, reduction of pulse, subsequent rise of temperature and respiration; after third injection, reduction of temperature, pulse, and respiration, subsequent rise of pulse and respiration; after fourth injection, reduction of respiration, subsequent rise of temperature; after fifth injection, reduction of temperature and respiration, subsequent rise followed by fall of temperature and respiration; after sixth injection, subsequent rise of temperature, pulse, and respiration, followed by fall of temperature to nearly normal; after seventh injection, reduction of pulse and respiration, subsequent rise of temperature; after eighth injection, reduction of pulse, subsequent rise of respiration, followed by rise of temperature; after ninth injection, reduction of respiration, subsequent rise of temperature and pulse, followed by fall to normal temperature and respiration; pulse remained a little above normal; later there were slight variations in temperature, pulse, and respiration; after tenth injection, subsequent rise of temperature and pulse, followed by fall of temperature; after eleventh injection, subsequent rise of temperature, pulse, and respiration, followed by fall of temperature; after twelfth injection, reduction of temperature, pulse, and respiration.

There were subsequent slight variations of temperature and pulse, the latter continuing a little accelerated when the patient was discharged from the hospital.

Thus it will be seen that five injections were followed by a fall of temperature, six by a decrease in the rapidity of the pulse, and seven by a slowing of the respiration. After five other injections the temperature also fell after a slight rise.

As is well known, however, the temperature, pulse, and respiration ratios are not preserved in sepsis, and the above records, while interesting, do not fully represent the effect of the treatment on the patient. As previously stated, when it was determined to use the streptococcus antitoxine, it was as a last resort, owing to the hopeless condition of the patient when regarded from the standpoint of previous experience. Within a few hours after the first injection a

reaction appeared, which progressed until convalescence was complete. For this case a hundred and fifty cubic centimetres of streptococcus antitoxic serum were administered without the production of any undesirable effects. This serum was procured from a horse which received by subcutaneous and intravenous injections nearly two thousand cubic centimetres of intensely virulent cultures of streptococcus within a period of eight months. Four weeks were allowed to elapse after the last injection before the horse was bled.

CROOKES'S "X" AND OTHER LIGHT RAYS.

A PROBLEM YET TO BE SOLVED IN THERAPEUTICS, ETC.

By J. MOUNT BLEYER, M. D., F. R. A. M. S.,

MEMBRE DE LA SOCIÉTÉ FRANÇAISE D'OTOLOGIE, DE LARYNGOLOGIE ET DE RHINOLOGIE, PARIS; MEDICAL EDITOR OF ELECTRICAL REVIEW.

This communication is the forerunner of a series of experiments now under way to determine the further effects of all light rays on animal and vegetable life, the outcome of which as yet is not settled.

The whole civilized world is at present engaged in the task of solving the problem of the penetrative power of the cathode rays. That these rays do force their way through opaque bodies that ordinarily arrest the transit of sunlight has been demonstrated, and the questions to be solved are as to the practical application of this peculiar property. We know, or rather Röntgen has told us, that unlike sunlight these cathode rays do not undulate in waves from their source of origin, but move backward and forward, and to this property their power to penetrate opaque bodies is most probably due; or, as has been mooted, this power as demonstrated may be an energy in the shape of radiation. The advantages that may accrue from it to the science of surgery, the valuable adjunct that it may prove to be as a means of diagnosis, have already been spoken of, and it only remains to complete the experiments that will demonstrate easy means of their practical application. Aside from this it is fair to presume that the rays have a subtler power than this one of penetration. Ordinary light is one of the main factors in the development and growth of animal life. We have studied the effects in this direction, and know that sunlight is essential for the growth and development of both animal and vegetable tissue. What effect may these different light rays have on pathological conditions?

The subtlest chemical force is sunlight; it brings about the most powerful reactions that are apparent yet undemonstrable. We see the reaction of a ray of sunlight upon a plate prepared with sensitive salts and observe the chemical decomposition. So, too, do we watch its action upon the plant, and we know that color, strength, and fructification depend to a large measure upon sunlight.

The same applies to animal life. We have in light a therapeutic agent that has been underestimated, if not altogether lost sight of and neglected. The few thoughtful men who have striven to advance the title of light in this direction have been scoffed at. Their labors have not even been accorded respectful consideration, and simply because the average therapist will adopt nothing that can not be demonstrated in the glass receiver of his laboratory, the reaction of which he can not see going on before his eyes, and the formula of which he can not determine.

Modern chemistry, as I have said, is far subtler than this, and the great evidence is the spectrum as an analyst. Who to-day refers to the work of the great Moleschott? Yet in the light of recent observations we are slowly arriving at the realization that our principles of therapy must soon change, that their Waterloo is impending, that we must hold physiology higher than we have been accustomed to.

These are the reasons why I have undertaken a few investigations in order to ascertain the effect of these rays upon animal life and upon the tissues. The only leg we have to stand on at present is the singular phenomenon of the penetrative force of these rays. Is not the hypothesis fair to set up that these rays, in forcing their way through tissues, exercise some action upon the tissues in their transit through them? The work is notably slow and tedious, besides involving much cost and time. I can hold forth little beyond saying that up to the present moment close observation of the action of these rays upon animal and vegetable life is being carried on.

In view of the great interest being displayed at this time over these "X" rays, or unknown rays, and the many series of experiments which are being carried on by learned scientific men in their various institutions along the lines laid out by Röntgen and others, I have thought it of some value to give my little mite herein, by foreshadowing, perhaps rightly and perhaps wrongly, the possible rôle that these unknown rays may yet play in our therapeutics and physiology.

These "X" rays have not only given a stimulus to further scientific investigations in different lines, but have also excited great popular interest. Up to the present time many interesting problems have been solved and still the beginning has not been made! This might one say at the finish of this paper at the word "*conclusion*," which is an absurd one to write in this instance, when the whole subject of "X" rays is astir with life, and when every day seems to bring out some fresh aspect, to develop more clearly some truth of which we have now only a glimpse. The only proper conclusion to such an important discovery as that of Professor Röntgen's now is to herald the advent of the very latest discoveries and to prepare for more to come.

Crookes's most classical researches on electric discharges in high vacua have taught us that in the extremely attenuated gaseous residues in the tubes which he employed the discharges from the negative pole, or cathode, can cast shadows on the walls of the inclosing tube. Since then these "X" rays have received attention and much patient investigation at the hands of many experimenters, including Röntgen, Goldstein, Weidmann, Lenard, etc.

These mysterious and curious rays are very active in exciting phosphorescence, and move quite differently from all ordinary rays. Hertz added much toward elucidating these discoveries by the acute observation that the "X"

rays, though passing through glass with difficulty, would pass through thin sheets of metallic substances which would be quite opaque to ordinary light. To these Professor Röntgen adds his miraculous discovery in producing the noted "shadowgraph" through opaque substances. We are all familiar with the methods of producing these pictures, so no further details need be here discoursed upon; besides, the dailies and scientific papers have devoted so many of their pages to discussing the various and numerous opinions of savants from all over the world that those who have kept abreast with the time are fully informed.

Since it has been demonstrated to us that certain metals are permeable to "X" rays, it is now timely to test the permeability of other materials. It should thus appear to every thinking man that we need not stop the test at metals alone, but push on to other substances as well.

Who knows to what extent such investigations may prove yet more fruitful?

Let us understand a little more in detail something about the Crookes's tube. One must always know the manner of the working of an engine before he can put it to use. Then, practically speaking, this vacuum tube, as known by the inventor's name, is a vacuum bulb much like an ordinary electric-light bulb without the carbon filament in the centre. It has two platinum electrodes, one at the top and one at the bottom, just penetrating the glass. When it is ready for use the current is first passed through the induction coil and thus raised from a low to a high potential. A mechanical device, if attached for convenience, rapidly opens and shuts the circuit and gives a great number of alternations. The Crookes's tube must be placed in the circuit and the cathode or "X" rays are generated. While the current is making its high-potential discharges in this vacuous tube a violet fluorescence is observed in the glass. This fluorescent effect is very much like that obtained by rubbing a sulphur match on a dampened hand.

A little more theory on this subject will lead us still better to understand our subject in hand, especially if we are going to apply these "X" rays in another domain which is not yet explored.

We are entirely ignorant of electricity in all its forms, and we can not even directly recognize it as we do light and heat; we know it only by its luminous, calorific, chemical, or mechanical effects. Yet, though electricity does not appeal to any one of our five senses, we have a sort of vague sensation of it; as, for example, when the air is charged with electricity on the approach of a thunder storm. It then produces in us a particular nervous condition, before the storm has manifested itself by any calorific, mechanical, or luminous effects, and this particular nervous condition evidently corresponds to the electric state of the atmosphere. But all this is limited to a vague sensation which does not concentrate itself in any special organ, such as the organs of the five senses, and thus can not become a distinctly marked perception.

On the other hand, there is no doubt that electricity is not the only one of the properties of matter which partly evade our perceptions. We may reasonably suspect that many others are entirely unknown to us even by their effects, because these effects are not among those which are perceived by the five senses.

Long ago philosophers remarked that our knowledge of Nature was limited by the number of our senses, and would probably extend itself if these were increased or even perfected. Nothing, indeed, authorizes us to believe that the properties of Nature are limited to those which affect the senses of man.

Electricity in its many forms furnishes a good example of a property which we never knew directly and whose existence is still perfectly certain, since we have for a long time studied it in its manifestations and have succeeded in thoroughly mastering it. Physicists who live on intimate terms with this electric agent or prankster have not succeeded any better than ordinary observers in penetrating into the very bosom of this mysterious force, which, nevertheless, they control and direct at pleasure. But, to facilitate their explanation of it, they represent it as an invisible fluid, many million times lighter than air, whose different forms of movement produce heat, light, etc.

Clerk Maxwell was beyond a doubt one of the greatest physicists that the present century has produced, and next, if not his equal, was Dr. Hertz. Both these grand minds placed upon a safe and sound experimental footing certain electrical phenomena which have revolutionized modern thought.

To be brief, perhaps the most important of Maxwell's contributions to our knowledge was his electro-magnetic theory of light.

In the development of his theory, in which the identity of the light ether and the electro-magnetic ether was assumed, he reached certain conclusions which ought to be valid if the fundamental propositions of his theory are correct. These conclusions have since been largely verified by experiment, and the tendency of physical research has been toward the confirmation of Maxwell's theory.

Within the last two years, however, evidence in its favor has accumulated with wonderful rapidity, and has been of such a character as to leave hardly any doubt as to the reality of Maxwell's hypothesis.

It is almost entirely embodied in a series of brilliant and elaborate investigations made by Dr. Hertz, who, in their planning and execution, exhibited great experimental skill, together with a keen appreciation of the meaning of electrical phenomena.

To get some idea of their character it will be well to refer to the oscillatory nature of an electric discharge, a mechanical illustration of which may be found in the behavior of a bent spring or any other elastic body subjected to a strain.

If a spring is bent, the work expended in the bending is stored in the spring as potential energy, assuming its elasticity to be perfect. If it is freed from restraint, there will generally follow a series of oscillatory discharges of this energy, or conversions of potential into kinetic energy, and *vice versa*.

These rapid vibrations from side to side, passing from rest at the extremes of its motion to maximum velocity in the middle, would continue indefinitely were it not for the

dissipation of energy through molecular and other frictions. The electric ether in a Leyden jar or other condenser is in a condition somewhat similar to that in a bent spring, and especially in the fact that energy is stored as *potential* in the charge.

In studying this subject closely we find that as far back as 1842 Joseph Henry observed that the discharge of a condenser was oscillatory in its character, consisting of "several reflex actions backward and forward until equilibrium is attained."

Also Helmholtz showed a few years later that the discharge of a jar was not a simple motion of the electricity in one direction, but a backward and forward motion between the coatings in oscillation, which became continually smaller until the entire oscillation was destroyed by the sum of the resistance.

Sir William Thomson and Lodge took it up from the mathematical point, from which the conclusions have been verified by many experiments.

Dr. Oliver Lodge estimates that a gallon Leyden-jar discharge through a stout wire fifty or sixty feet long gives rise to oscillations as frequent as a million a second, while a pint jar, discharged in the ordinary manner by a short, good conductor, gives as many as fifteen millions a second.

These electrical oscillations must give rise to waves in the ether precisely as the oscillations of a tuning fork produce waves in the air, and the length of these waves will, of course, be equal to the velocity with which the wave is transmitted multiplied by its period. Assuming with Maxwell that the electric ether is identical with the light ether, and that therefore the velocity of transmission of the waves is approximately one hundred and eighty-six thousand miles a second, it is easy to calculate that the waves in the first instance will be about a thousand feet long, and in the second about sixty-five feet in length.

By diminishing the electrostatic capacity of the apparatus the period can be made still shorter and the wave length correspondingly less. For some years the existence of these waves has been accepted by physicists, but to Hertz belongs the great credit of having first actually found them in space, and of having established their existence by a series of his own experiments, remarkable alike for their beauty and their simplicity. It is impossible here to describe either method or results except in the briefest possible manner. As to the method, it may be said that it was in principle somewhat analogous to the use of a resonator in acoustic experiments, which responds to and makes sensible any sound with which it is synchronous.

Hertz's "resonator" is very simple in form, consisting of a short metallic circuit broken by a small interval across which sparks may pass. As to results, it is enough to say that he has been able to show that these waves obey all the laws, such as those of reflection, refraction, polarization, interference, etc., to which light waves are subject when proper consideration is given to the nature of the material employed to produce these various effects.

They have been concentrated by metallic mirrors and refracted by huge prisms of pitch. Metals, which are conductors of heat and electricity, are opaque to them, while non-conductors, or poor conductors, are transparent.

It is easy to see that if the vibration frequency is made sufficiently great, these waves will possess all the essential characteristics of light waves, and, remembering that *the smaller the capacity* of the charged body the more rapid the oscillations of the charge when it is disturbed, it will appear that electric charges on atoms or molecules might readily oscillate thousands of millions of times a second, and thus light might be regarded as a *purely electrical phenomenon*, as affirmed by Maxwell.

Altogether, the discoveries of Hertz must take high rank as making a distinct advance in electrical science, and especially as opening a wide field for investigation which promises rich rewards.

It must be remembered from close study of physics that if cords, chains, water, etc., can assume a wavelike motion, the wonderful tension and elasticity of the hypothetical ether would permit the latter to adapt itself to the most complicated movements almost with the rapidity of thought. The very spiral, spindlelike, or corkscrew motion observable in the chain and cord affords a good idea of the mechanism of the propagation of light, as the movement of each molecule of ether is always perpendicular to the path of the ray or wave of light. It can easily be conceived that vibrations of ether or light waves (no matter from what source generated) must affect even material substances, whether endowed with life or not. Thus it is maintained by General Pleasonton, U. S. army,* that remarkable cures have been effected in cases of nervous disease (when the voltaic shock has failed) by merely exposing the part affected to the rays of the sun passed through blue glass. Also he has experimentally made many most practical demonstrations in the development of animal and vegetable life, etc. Mr. Willoughby Smith has shown that the electrical conductivity of the element selenium is affected by exposure to light, and it was while in charge of the electrical department of the work of laying the cable from Valentia to Heart's Content (1860) and using the high resistance of selenium that Mr. Smith noticed that the deflection of the needle varied according to the intensity of light falling on the selenium, thus explaining the cause of that element not being constant as a resistance medium. Mr. Smith says, during the laying of the Atlantic cables (1873 and 1874): "I have with success adopted selenium bars protected from the action of light." Why, then, may we not expect that rays of light propagated from many sources will give us valuable effects in disease and growth? I bring these arguments and the problematic question before the notice of the profession in order to stimulate others besides myself to enlarge this field of investigation, as there is no telling what hidden forces await our unraveling of their laws and their probable therapeutic application, etc.

460 Lexington Avenue.

* *The Influence of the Blue Ray of the Sunlight and of the Blue Color of the Sky.* Philadelphia, 1876.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co.
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, FEBRUARY 22, 1896.

THE REMEDIAL ACTION OF ERYSIPELAS IN SYPHILIS.

A number of observers have noted the speedy subsidence of syphilitic manifestations under the influence of an attack of erysipelas, but thus far very little has been recorded tending to support the belief that syphilis is ever permanently cured by such an attack. In the *Centralblatt für innere Medicin* for February 1st Dr. Rudolph, of Magdeburg, reports two cases that illustrate the temporary subjugation of syphilis by an erysipelatous attack, but do not prove its absolute cure. In the first case, that of a man, fifty-two years old, the syphilis was of twenty-nine years' standing. The syphilitic manifestations observable at the time of his attack of erysipelas were two sores, one on the ala nasi and the other on the supra-orbital margin of the right side. On the ninth day of the erysipelas the sores had entirely healed. The patient was not seen after that, so it can not be said that he continued free from syphilitic manifestations.

The other case was that of a young woman who had had syphilis for four years, had undergone three courses of mercury, one by inunction and two by hypodermic injection, and had taken great quantities of potassium iodide. For all that, she was found to have several glands enlarged to the size of a pigeon's egg under the lower jaw on each side and posterior cervical glands varying in size from that of a pea to that of a hazelnut. She was very weak and emaciated, and, in consequence of rheumatic pains in the knees, accompanied by well-marked inflammatory thickening, could walk but little. This rheumatic trouble, she said, had been present ever since she had had syphilis, also exceedingly severe headache. There was paresis of the left half of the face, and occasionally there were spasms of that side of the face. In spite of her weakness, she was given another course of mercurial inunctions, a drachm of mercurial ointment being used daily for thirty days. The effect was nil, and she declined to submit to further treatment.

In about a year Dr. Rudolph was called to attend her again. She was then extremely cachectic, she had been bedridden most of the time on account of great debility and pains in the knees, and her headaches had never left her. Moreover, her former manifestations of syphilis were still present. She was now in the early stage of what proved to be a severe attack of erysipelas which spread from the face over the entire head. In ten days the fever and the exanthem had entirely disappeared; not only that, but she was apparently cured of her syphilis. The clusters of submaxillary glands, that had threatened to suppurate, melted away entirely as the inflammation disappeared; there was no more headache or articular pain; the facial paresis and spasms gradually ceased; and her general health was so rapidly restored that in the course of a month she was able to return to work as a tailoress. A relapse occurred, however, at the end of a year.

The author cites somewhat similar cases observed by various writers, together with one recorded by Petrowski in which the patient, who remained under observation for several years, seems to have been really cured. He was a powerfully built soldier, twenty-three years old, who was found while suffering with facial erysipelas to have a superficial sore on the penis, swelling of the inguinal and cervical glands, erythematous redness of the pharynx, and broad condylomata on the soft palate and on the pharyngeal wall. The erysipelas lasted fourteen days, and the fever was severe. With its subsidence, and without any mercurial treatment having been employed, all the syphilitic manifestations disappeared, and none others ever made their appearance.

MINOR PARAGRAPHS.

THE QUESTION OF THE DURATION OF ANTISYPHILITIC TREATMENT.

In an article entitled The Dangers of Syphilis, and How to Avoid Them, published in the *Journal of the American Medical Association* for January 25th, Dr. Algernon S. Garnett, of Hot Springs, Arkansas, a gentleman of large experience in the treatment of syphilis, asks how we can measure the duration of diseases induced by micro-organisms that may sleep for years before wakening to a destroying activity. It is our inability to answer this question, he remarks, that should make us hold every case of syphilis *sub judice* for at least seven years. Active treatment need not be employed for so long a time; after three years of active treatment with mercury, "the mixed treatment," followed by mercurial treatment for a month twice a year for three years more, will serve, he thinks, to prevent any further destructive action in ordinary cases.

A WEEKLY JOURNAL OF GYNÆCOLOGY.

The first number of *La Semaine gynécologique*, dated February 4th, has reached us. It consists of eight large double-columned pages of reading matter. The editor is Dr. R. Pichevin, of the Necker Hospital, and the editorial commission is composed of nineteen eminent French physicians and surgeons. The editor's salutatory is followed by an article on The Pathogeny of Perimetric Affections, by Dr. Bouilly, of the hôpital Cochin, and after this there are abstracts from French, American, and German sources.

ITEMS, ETC.

The New York Health Department's Diphtheria Antitoxine. — The following *Circular of Information* has been issued:

The Health Department of New York City desires to direct the attention of physicians to some important modifications and improvements which have been made in the preparations of antitoxic serum which it is now able to furnish for the prevention and treatment of diphtheria.

As the result of some investigations carried on in the bacteriological laboratory of the Health Department, which have greatly perfected the methods of production of diphtheria antitoxine, it has been possible to prepare antitoxic serum of much greater power than that which has previously been in use. The curative value of any preparation of antitoxic serum is, of course, due, not to the amount of serum, but to the amount of antitoxine which the serum contains, and investigations seem to show that the disagreeable symptoms sometimes occasioned by the use of diphtheria antitoxine are due, not to the antitoxine, but to the horse's blood serum in which the antitoxine is present in solution. It naturally follows that more concentrated preparations, in the use of which only small doses are required (two to five cubic centimetres), will diminish materially the frequency with which the rashes and other symptoms follow the administration of the remedy.

The preparations of antitoxine hitherto furnished by the Health Department are known as Nos. 1, 2, and 3 (Behring's standard), and correspond to Nos. 1, 2, and 3 of Behring's preparations. No. 1 contains sixty antitoxine units to each cubic centimetre of the serum, or six hundred units in each phial.

No. 2 contains one hundred antitoxine units to each cubic centimetre of the serum, or one thousand units in each phial.

No. 3 contains one hundred and fifty antitoxine units to each cubic centimetre, or fifteen hundred units in each phial.

The Health Department is now able to furnish much more concentrated preparations than No. 1 and No. 2, and has, therefore, decided to discontinue the preparation and use of these weaker serums. Hereafter diphtheria antitoxine will be furnished in the following grades and amounts:

Grade No. 3. Phials contain 10 c. c., 150 antitoxine units (Behring's standard) to each c. c., or 1,500 units..... $1.50

Grade No. 3a. Phials contain 5 c. c., 150 antitoxine units (Behring's standard) to each c. c., or 750 units..... 75

Grade No. 4. Phials contain 5. c. c., 200 antitoxine units (Behring's standard) to each c. c., or 1,000 units..... 1.25

Grade No. 5. Phials contain 5 c. c., 300 antitoxine units (Behring's standard), to each c. c., or 1,500 units..... 2.00

Grade No. 6. Phials contain 5 c. c., 400 antitoxine units (Behring's standard) to each c. c., or 2,000 units..... 3.00

It is at once apparent that preparations of antitoxic serum which contain a large amount of antitoxine to each cubic centimetre are more desirable than those containing a smaller amount, as the dose required is proportionately less and the disagreeable symptoms following its use will be relatively less frequent. The highest-grade preparations, however, are much more difficult to produce, are necessarily more expensive, and at present, even with approved methods, can be produced only in limited quantities; therefore the department, as before, furnishes the serum in a number of different strengths at prices as nearly as possible at cost.

The average curative dose of diphtheria antitoxine is about one thousand units, but for very severe cases or croup cases, or those in which the serum is not administered until the third day or later, fifteen hundred or two thousand units are often required, and sometimes the dose must be repeated, so that altogether from four to six thousand units may be required in a single case. Full directions as to the use of the serum accompany each phial.

The new preparation of antitoxic serum will be gladly furnished, as heretofore, without charge to all public hospitals, dispensaries, and charitable institutions in New York city on application, and they can be obtained free by physicians at most of the depots established for the supply of diphtheria culture tubes for use among those persons who are too poor to pay for the remedy. In such cases the physician in attendance is required to fill out a blank, to be obtained at each of the stations, giving particulars in regard to the case and the ultimate result of treatment. Medical inspectors of the Health Department will also be sent, on application, to administer antitoxine in any case of diphtheria under the supervision of the attending physician.

The Health Department desires to encourage the use of antitoxic serum for the prevention of diphtheria, as the experience with its use for this purpose has been most satisfactory. From one hundred to three hundred units, according to age, are required to confer immunity. The immunity thus produced ordinarily lasts for a period of at least four weeks. With the new and strongest preparations of antitoxic serum, only very small quantities of serum (from six to fifteen minims) are necessary for the production of immunity.

[Signed.] GEORGE B. FOWLER, M. D.,
Commissioner of Health.

Approved by the Board of Health at a meeting held February 11, 1896,

EMMONS CLARK, *Secretary.* CHARLES G. WILSON, *President.*

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending February 18, 1896:

DISEASES.	Week ending Feb. 11.		Week ending Feb. 18.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	9	3	7	1
Scarlet fever	155	12	136	11
Cerebro-spinal meningitis	1	1	1	1
Measles	413	30	545	16
Diphtheria	294	42	256	28
Small-pox	1	0	0	0
Tuberculosis	65	92	103	132

The Late Dr. John Howard Ripley.—At a special meeting of the medical board of St. Francis Hospital held February 18, 1896, the following resolutions were adopted:

Whereas, It becomes our painful duty to announce the death of Dr. John Howard Ripley, attending physician to the St. Francis Hospital and late president of its medical board; therefore be it

Resolved, That the medical board desires to place on record its due appreciation of his long and valuable services to this institution, faithfully and cheerfully rendered for nearly a quarter of a century.

Resolved, That from his first connection with this hospital he was an ever-willing servant of its best interests, an ardent promoter of its highest aims, and an active participator in all its charitable benefactions.

Resolved, That his untiring zeal in the performance of his arduous and responsible duties, his wisely conservative judgment, his painstaking accuracy of observation, and his ever-available and profound knowledge of clinical phenomena were qualities which command the highest respect of his associates and stimulate the emulation of all who share the results of his unselfish labors.

Resolved, That the remembrance of his manly disposition, his frank manner, his energetic spirit, and his scholarly at-

tainments will ever serve as a cherished lesson from the well-ordered life of a dutiful worker, an indefatigable investigator, and a model physician.

[Signed.] { George F. Shrady, M. D., *President;* G. M. Edebohls, M. D., *Secretary.*

The Clinical Recorder.—This is the title of a new journal, apparently a monthly, edited by Dr. William S. Gottheil and published in New York. The first number, for February, 1896, contains thirty-nine pages of reading matter.

The University of Vermont.—Dr. George Thomas Jackson, of New York, has been made professor of dermatology in the medical department.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the two weeks ending February 15, 1896:*

Steele, J. M., Surgeon. Detached from the Independence and ordered to the Monadnock.

Society Meetings for the Coming Week:

Monday, *February 24th:* Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore Medical Association.

Tuesday, *February 25th:* New York Dermatological Society (private); Buffalo Obstetrical Society.

Wednesday, *February 26th:* New York Academy of Medicine (Section in Laryngology and Rhinology); New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Metropolitan Medical Society, New York (private); Medical Society of the County of Albany, N. Y.; Philadelphia County Medical Society.

Thursday, *February 27th:* New York Academy of Medicine (Section in Obstetrics and Gynæcology); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Mass., Society for Medical Improvement (private); Pathological Society of Philadelphia.

Friday, *February 28th:* New York Clinical Society (private); New York Society of German Physicians; Yorkville Medical Association, New York (private); Philadelphia Clinical Society; Philadelphia Laryngological Society; Cleveland Medical Society.

Births, Marriages, and Deaths.

Married.

Davidson—English.—In Mobile, Ala., on Wednesday, February 12th, Dr. Frank E. Davidson and Miss Janie English.

Ellis—Venable.—In Atlanta, Ga., on Wednesday, February 12th, Dr. James N. Ellis, of Richmond, Va., and Miss Leila Venable.

Williams—Dike.—In Brooklyn, on Wednesday, February 12th, Dr. George C. F. Williams, of Hartford, Conn., and Miss Jessie Scott Dike.

Died.

Armstrong.—In Atlanta, Ga., on Tuesday, February 11th, Dr. William S. Armstrong.

Boorse.—In Milwaukee, Wis., on Saturday, February 15th, Alice Pierson Boorse, wife of Dr. Lorenzo Boorse.

Dwinelle.—In Cazenovia, N. Y., on Thursday, February 13th, Dr. William H. Dwinelle, aged seventy-five years.

Hunter.—In New York, on Friday, February 14th, Dr. Alexander S. Hunter, in the fifty-sixth year of his age.

Purcell.—In New York, on Monday, February 17th, Dr. William J. Purcell.

Ripley.—In Norma, Florida, on Friday, February 14th, Dr. John Howard Ripley, of New York, aged fifty-eight years.

Letters to the Editor.

DOCTORS' OFFICES IN BUSINESS BUILDINGS.

Equitable Building, 120 Broadway, New York,
February 1, 1896.

To the Editor of the New York Medical Journal:

Sir: Your comment in the current number of the *Journal*, on physicians occupying office buildings, prompts me to write that for over three years my office for consulting has been in the Equitable Building, and that my experience justifies me in commending the action of the Metropolitan Life Insurance Company in preparing to rent to reputable physicians. One of the advantages is that of removing one's work in great part from contact with one's family; women like this especially, as there is an impersonality about a great office building nowhere else obtainable; moreover, the physician obtains quarters in a splendidly fitted building, with surroundings equal to those of many a palace. In the great insurance-company buildings, the woodwork alone is of the highest order. It should be saving of money, as one can live in a more modest home, and not as his business increases swell out into larger establishments, such "swelling" being the downfall of many medical men financially.

There is an ethical consideration; the "great" physician with an immense income does not do as good medical work as the man that earns much less, other things being equal as to education and natural ability. The laity think the opposite, and if they find a physician's office crammed full of patients, he is their man. Now, the coming practice of medicine is to be in large part the more careful handling of chronic diseases; such handling takes time, and as soon as the laity realize that a physician will do better work who manages but a few patients, the better it will be for all concerned. The aggregation of doctors in a first-class office building will tend toward this desirable end. Working on a common level, medical men work altogether too long each day, and live altogether too short lives. To go home from the office and know that a great part of the day's work is done, and that one will not have to labor away into the evening, is a fine thing. Educate the people to know that, except in case of emergency, which we are always prepared for, the office work is to be done at certain hours in one place, and the doctor will have more rest and time to see his family, bring up his children in the way they should go, and receive the admonitions of his wife.

Other advantages are, a fireproof and carefully watched building, and good attendance as to cleaning.

The only objection is the necessity of two addresses. It seems to me that, as the Metropolitan company are fitting up for a large number of doctors, special arrangements could be made whereby telegrams received after office hours would be forwarded by the superintendent to the homes of the persons addressed. I wish to say one word as to so-called waste of money in the great insurance-company buildings; from my

personal observation down town, I believe that the insurance companies have invested the money of the policy holders most wisely; "the best is the cheapest"; they have used the best as to material, and have not hesitated to get enough light and air. This can not be said of some buildings put up by rich men for investment; they have scrimped so as to material and space that their investment I think does not pay as it otherwise would.

Finally, all hail the day when medical men will not be in contact with patients more than eight hours a day.

JOHN A. CUTTER, M. D.

THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

NEW YORK, *February 11, 1896.*

To the Editor of the New York Medical Journal:

SIR: In view of certain published comments on the anonymousness of my letter concerning the Post-graduate Medical School and Hospital, in your issue of January 18th, will you allow me to state that the letter went to the editor with a postscript to the effect that you held my name at the disposal of any one who had a right to the information, and that that postscript was omitted for reasons unknown to me?

May I also add that as I have excellent reason to believe that my identity has been well known from the first to the gentlemen concerned, and to say that the important facts stated ("charges" if they will) were taken directly from their own *Report* and temperately commented upon, the virtuous reprobation of the anonymousness and the refusal to reply seem not only inconsiderate and possibly unwise, but also not wholly ingenuous?

MEDICUS.

BRACKEN'S *MATERIA MEDICA.*

MINNEAPOLIS, *February 11, 1896.*

To the Editor of the New York Medical Journal:

SIR: It may not be wise for an author to presume to criticise the reviewers of his work, but the review of my book entitled *Outlines of Materia Medica and Pharmacology* in the *New York Medical Journal* of February 8, 1896, page 189, is so unjust as to deserve a little notice.

The reviewer quotes the title correctly; he also quotes the purpose of the book correctly, and then proceeds to abuse it for its meagreness in therapeutics. There is nothing about the book to indicate that it is a work on therapeutics. Its title states plainly what it is, and its preface states plainly its purpose. The book was designed for use during the first year of a three years' graded course in materia medica and therapeutics, the first year being devoted especially to the study of materia medica. All that is given of therapeutics is simply for illustrative purposes.

The word "*kolyseptic*" is correctly used, I think, although I have not been able to find it in any of the recent dictionaries consulted. It is defined in Helbing's *Modern Materia Medica*, page 55 (Lehn & Fink, 1892). It is also defined on page 171 of my own book, but, unfortunately, the word itself is not recognizable there because of a typographical error.

The reviewers for the *Journal of the American Medical Association* (Dec. 14, 1895, p. 1050), for the New York *Medical Record*, and for the *American Journal of Pharmacy* (January, 1896, p. 48) seem to have appreciated the purpose of the book. If your reviewer will read these reviews he will appreciate the fact that some writers can confine themselves to their text.

I accept the error in the spelling of the word albuminurea. It might have given me some assistance for any prospective revision of the book had he stated the page where the error is to be found. I find the word correctly spelled in several places where I have looked it up.

H. M. BRACKEN, M. D.

Proceedings of Societies.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Ninetieth Annual Meeting, held in Albany, on Tuesday, Wednesday, and Thursday, January 28, 29, and 30, 1896.

The President, Dr. ROSWELL PARK, of Buffalo, in the Chair.

(*Continued from page 185.*)

Shall the State Attempt to Control the Spread of Tubercular Disease?—Dr. J. L. HEFFRON, of Syracuse, read a paper with this title. He said that by State control leprosy had been banished and small-pox robbed of its terrors, but tuberculosis still claimed one fourth of all the deaths for its own. According to the reports of the State Board of Health for the past ten years, the average number of deaths from tuberculosis each year was 12,616. Of course, it was well known that if all the cases of death from tuberculosis were reported, these figures would be materially augmented. Yet even as they stood, in view of the fact that modern science taught that tuberculosis was almost invariably communicated, and hence could be largely prevented, were they not a sufficient argument for State control? He advised the compulsory registration of all cases of tuberculosis, the distribution of circulars of information regarding the true nature of this disease and the best methods of preventing its spread, and the isolation of hopelessly ignorant or vicious individuals affected with tuberculosis in hospitals provided by the State.

Dr. A. JACOBI, of New York, said that so favorable had been the experience in Europe regarding the restoration of tuberculous individuals to usefulness in the community that even some of the life insurance companies had found that it was better for them from a financial point of view to provide sanitaria for those of their policy holders who were afflicted with tuberculosis than to allow the disease to proceed unchecked and pay the amount of the policy at the death of the holder.

Dr. E. F. BRUSH, of Mount Vernon, thought the medical profession was doing harm in associating tuberculosis with scarlet fever and other contagious diseases, for these latter diseases had a distinct period of incubation. His own studies had convinced him that the only people in this world who enjoyed freedom from tuberculosis were those who did not domesticate the cow.

Discussion on Early and Latent Syphilis in Infants and Young Children.—Dr. GEORGE T. ELLIOTT, of New York, discussed hereditary syphilis, and compared the signs and symptoms found in infants with those observed in older subjects. He said that the syphilitic infant, although sometimes puny, wrinkled, and affected with the snuffles at birth, might, on the contrary, appear well nourished and healthy for several weeks and months, and then suddenly succumb to the disease, presenting at the time but few symptoms of syphilis. The bullous syphilide, found particularly on the soles, was very characteristic of syphilis, and could be readily distinguished from simple pemphigus by the fact that the latter occurred during the first two weeks, had no special localization, and was not associated with impairment of the general health. Condylomata at the corners of the mouth were also quite character-

istic of syphilis. It should be borne in mind that in infancy there might be a tubercular as well as a syphilitic dactylitis.

Nervous Manifestations of Hereditary Syphilis.—Dr. B. Sachs, of New York, in a paper with this title, said that syphilis of the nervous system was apt to be a cerebro-spinal affection, involving a small area of the brain or the spinal cord. A small proportion only of infantile palsies were due to cerebro-spinal syphilis. Among the spinal manifestations was a spastic paraplegia of late development.

Dr. L. Duncan Bulkley, of New York, said that syphilis in young children should be treated at the earliest possible moment, for, in the language of Fournier: "Nothing is so dangerous to its surroundings as a syphilitic child." He favored the use of inunctions of mild mercurial ointment and the continuance of the treatment long after the disappearance of symptoms.

Dr. Edward D. Fisher, of New York, agreed with the last speaker as to treatment, but said that where the old "mixed treatment" was prescribed, it seemed to him better to give iron at the same time, but in a separate mixture. For older children iron was not so commonly needed.

The Equilibrium Function of the Ear.—Dr. Gaylord P. Clark, of Syracuse, described a number of recent physiological experiments that had been conducted on the dogfish with a view to determining the function of the semicircular canals. As a result of certain changes of position of the body of the fish, and also of stimulation of certain ampullæ, the eyes and fins made motions indicating an effort to restore the fish to the normal resting position. The author said that he had also succeeded in collecting considerable clinical evidence pointing to a similar equilibrium function in the human ear. Various experiments on invertebrates had shown that the otoliths had a direct connection with the equilibrium of the animals. Audition appeared to be the function of the highly developed ear.

Diseases of Intra-uterine Life.—Dr. Egbert H. Grandin, of New York, read a paper in which he said that it was well known that small-pox, measles, and other similar diseases were transmitted by the mother to the fœtus, but the mode of transmission was a matter of speculation. A glance at the anatomical relations of the placenta showed that there could be no direct transfer, but it was possible for toxic material to be transmitted to the fœtus by transfusion or by the migration of leucocytes. This presupposed an unhealthy placenta, and, as a matter of fact, the probabilities were that most placentæ were slightly abnormal, for the slighter degrees of endometritis were extremely common.

Eclampsia.—Dr. P. W. Van Peyma, of Buffalo, in a paper on this subject, dwelt on the various theories as to the nature of this disorder. He said that the opinion most generally accepted at the present time was that it was a toxæmia. His own studies in post-mortems had shown that there might be severe uræmic convulsions ending in death, with scarcely any recognizable renal lesions. The toxines causing uræmia were varied and numerous. In eclamptics the urine was less toxic than normal, while the blood serum was more toxic. Jaundiced urine was exceedingly toxic. The fœtus was an additional source of waste products and an additional cause of danger to the mother. The indications for treatment were to remove the toxic materials in every way practicable. The author said he had had considerable experience with the use of veratrum viride in these cases, and where the pulse was strong enough to warrant its employment it would be found a useful agent. He had never seen the convulsions continue when the pulse had been brought down to sixty a minute. The very depressing action of pilocarpine made it a dangerous drug. He believed that many patients with eclampsia died from over-medication. *Accouchement forcé* had been recommended, but the irritation and shock of such active interference more than counterbalanced the advantages in the opinion of some obstetricians. His own practice represented a middle ground; it was to induce labor or hasten delivery when other methods failed to control the convulsions.

The Medical Education of the Future.—Dr. Charles W. Eliot, president of Harvard University, delivered an address on this subject. He said that from the improvement of the past twenty-five years we should be encouraged to work hopefully for improvements still needed. Thirty years ago there were no requirements for admission to our medical schools, except registering the name and paying the fee. Hundreds who could barely read or write, and whose powers of observation had scarcely been exercised at all, entered the medical schools. They were required to attend only about three winter terms of four months each, the course was not graded, and the clinical instruction was given to the students in large groups. At the final examination, at least at Harvard, every one who passed in the *majority* of the nine subjects received his degree; hence one could be ignorant of four out of the nine fundamental subjects of medicine. At the present time the students were required to attend four whole years, with the exception of the summer months, a preliminary examination was demanded, to pass the final examination successfully required the person to be proficient in every one of the prescribed subjects and a small selection of elective subjects, the course was graded, and the clinical instruction was almost individual. The rapid growth of the collateral sciences also required much more laboratory work than formerly. The tendency at the present time was to place less reliance on drugs and to give greater attention to the surroundings of the patient—to the ventilation, the lighting, the temperature of the room, and the condition of the drinking water and of the excreta. The progress in preventive medicine also charged the physician of the present day with new duties requiring an amount of intelligence and training. Thoroughly educated physicians were needed to fill public sanitary positions, and these important positions should be proportionately remunerative. Every physician should be a zealous philanthropist and missionary, and hence he should have a full knowledge of preventive medicine, together with the requisite moral and intellectual powers, particularly as regarded writing. Such a physician could exercise an important influence in controlling those who were so violently opposed to the beneficent practices of vaccination and vivisection. In answer to the question of how this better education was to be obtained, the speaker said that no more could be done in the four years at Harvard than was now done, and it was inexpedient to raise the average age of graduation in medicine; hence we must turn to the period between the ages of six and twenty-one years for that enlarged education required by the physician. Much time was now wasted in our schools. The medical profession should insist that botany, zoölogy, chemistry, and physics should receive due attention in the elementary schools; English should receive much more attention; and the elective system should be much more developed. The clerical profession had been too long dominant in our schools; physician should be willing to counteract this tendency by serving on boards of school trustees. Harvard had followed the important step taken by the Johns Hopkins University in demanding a degree in arts, philosophy, science, or medicine as a requisite for admission, but in Harvard this new regulation would not be in force until after the year 1901.

Tetanoid Hysteria.—Dr. Grace Peckham-Murray, of New York, in a paper with this title, described the symptoms of the disorder, and reported three cases that had come under her observation, each one of which had represented a distinct type of the disease.

The Treatment of Malignant Disease in So-called Cancer Institutions.—Dr. Nathan Jacobson, of Syracuse, read a paper with this title. The author said he had had a rare opportunity of catching a glimpse of the inner workings of one of the celebrated institutions of this class, owing to the fact that the husband of a patient treated there for a time had taken the trouble to carefully compile a table containing the names, addresses, and other important data of every case in the institution at the time his wife had been admitted. The results of this private investigation were appalling. Of the twenty-six patients in this list, ten had already died at the time of tabulating these notes—fourteen months after his wife's admission; six had been pronounced hopeless; three had recurrences of the malignant disease; and seven only believed themselves to be cured. Of the last mentioned it had been noted that four of the cases were certainly very trifling affairs. Dr. Jacobson's patient had suffered terrible torture at this place for the fourteen months, during which time her husband had paid for professional services alone fifty dollars a week. When taken from the institution she had been extremely weak, and had presented evidences of extensive cancerous deposits in both lungs. She died shortly afterward, and then he had found that in addition to these secondary deposits, both pleural cavities were filled with fluid, and one pleura was connected with the unhealed area in the mammary region.

Dr. L. D. Bulkley, Dr. Ely, and Dr. J. N. Goff said that they could from experience heartily indorse what had been said in the paper about the outrages committed in institutions of this kind.

Subsequently a resolution was presented by Dr. Bulkley, and adopted by the meeting, looking to the passage of a bill by the Legislature which would place such cancer institutions under the care of the State Board of Health.

Alcoholism and Public Health.—Dr. H. R. Hopkins, of Buffalo, in a brief address on this subject, protested most emphatically against the absurd and vicious law providing for the compulsory teaching of the effects of alcohol and narcotics in the public schools.

A resolution was introduced by Dr. A. W. Suiter, and adopted, directing the committee on legislation to use all honorable effort to bring about a repeal of this law or an essential modification of it.

On the Evolution of Pathology.—Dr. J. H. Hunt, of Brooklyn, in an address so entitled, and freely illustrated with lantern photographs, begged the audience to "journey through the cemetery of medical history, and take glances at those who had contributed to medical science."

(*To be continued.*)

Book Notices.

System of Surgery. Edited by Frederic S. Dennis, M. D., Professor of the Principles and Practice of Surgery, Bellevue Hospital Medical College, etc. Assisted by John S. Billings, M. D., LL. D. Edin. and Harv., D. C. L. Oxon., Deputy Surgeon-General, U. S. A. Vol. III. Surgery of the Larynx, Tongue, Jaws, Teeth, Salivary Glands, Neck, and Chest—Diseases and Surgery of the Eye and Ear—Surgical Diseases of the Skin—Surgery of the Genito-urinary System—Syphilis. Profusely Illustrated. Philadelphia: Lea Brothers & Co., 1895. Pp. 7 to 919. [Price, $6.]

The third volume of this work is chiefly devoted to specialism and establishes more fully than the preceding ones the encyclopædic character of the work.

It opens with a section upon the Surgery of the Larynx and Throat (which might justly be called a treatise), by Dr. D. Bryson Delavan.

Under the heading of inflammatory diseases he pays particular attention to œdema of the larynx, describing in a terse and interesting manner its causes, symptoms, and treatment. Here as elsewhere he suggests a wider field of usefulness for the O'Dwyer tubes. They are no longer confined to the treatment of croup and diphtheria, but are useful adjuvants in the management of all injuries and diseases which obstruct the laryngeal canal. In injuries such as fracture or dislocation, he shows, they serve not only as tubes through which to breathe, but also as internal splints to hold the parts in place, and thus is pointed out the importance to the general surgeon of being familiar with their practical application. Tracheotomy, laryngotomy, and thyreotomy are described with the minuteness of a specialist. The indications and field for laryngectomy are carefully discussed and, of the different methods proposed, the author gives his preference to that of Solis-Cohen, which he describes with great detail. He justly calls attention to the harm of indiscriminate and careless amputation of the uvula.

In discussing Ludwig's angina he leans to the view of Semon, that it is a septic sore throat with a peculiar localization, and not a specific disease. In the section on retropharyngeal abscess we are surprised to find that he fails to mention its interference with breathing, and its tendency to occur in cases of scarlet fever and measles. The general excellence of the article, however, more than covers any slight omissions such as these.

Following this section come sections on the surgery of the mouth and tongue, by Dr. H. H. Mudd; on diseases of the salivary glands, by Dr. Charles B. Porter; on the surgery of the neck, by Dr. Willard Parker; on the surgery and injuries of the chest, by Dr. Frederic S. Dennis; and, later on in the book, a chapter on the surgical diseases of the jaws and teeth, by Dr. Louis McLane Tiffany. These articles are all brief and well written. They appeal more to the general surgeon than those upon the eye, ear, throat, and skin, of which this volume is chiefly composed.

We fail to observe why the article on diseases of the jaws and teeth should not have immediately succeeded that upon the mouth and tongue instead of being "sandwiched" in between that on the ear and that on the skin.

The articles upon the diseases and operative surgery of the eye, by Dr. de Schweinitz and Dr. Noyes, are complete and well illustrated.

They contain all that the general surgeon needs to know about the eye, and deal with much that he had better never attempt. There is danger that such writings in a work upon general surgery will tempt men to try operations which they are utterly unfitted to perform. The utmost commendation may be given to the articles on diseases of the ear, by Dr. Bacon, and on diseases of the genito-urinary system, by Dr. White and Dr. Furniss. The latter chapter is comprehensive and most carefully prepared. It is worthy of publication as a separate volume, and would make a fairly good-sized one, too.

Dr. White presents statistics that make a strong argument for the correctness of his views regarding castration for enlarged prostate, although he is moderate in his statements for the operation.

The volume closes with a chapter on syphilis by Dr. R. W. Taylor, whose name is a warranty for the character of its contents. If one could thoroughly master this volume he would be an accomplished laryngologist, aurist, oculist, dermatologist, and genito-urinary surgeon. It furnishes the reader with five reference books in one, and will prove, no doubt, as popular as any other volume in the *System*.

The mechanical work, the cuts and plates, are all to be commended, especially the colored plates, which are a distinct improvement on anything of the sort in the two previous volumes.

Pregnancy, Labor, and the Puerperal State. By Egbert H. Grandin, M. D., Consulting Obstetric Surgeon to the New York Maternity Hospital, etc., and George W. Jarman, M. D., Gynæcologist to the Cancer Hospital, etc. Illustrated with Forty-one Photographic Plates. Philadelphia: The F. A. Davis Company, 1895. Pp. 261. [Price, $2.50.]

The authors of this work have treated the subject entirely from the practical standpoint—that is, it is assumed that the reader knows much that is to be found in the ordinary systematic treatises upon midwifery. Hence it is not a book for those who are at the threshold of the study of medicine. It is more or less of an advantage to one who has passed the rudiments of obstetric knowledge to have for reference a work expressing, as this does, in terms concise and lucid the facts which are essential in obstetric practice.

The book is a record of personal experience and personal opinion, without padding, and as such will be regarded as a valuable contribution to the American authorities, a goodly company, upon this subject.

A distinguishing feature of the work is found in the many photographic representations of various incidents in pregnancy and labor. The principle in view is a very useful one, and nothing could express more forcibly than such pictures from life the conditions which they illustrate. But photographs, unless very clear and well finished, are neither artistic nor satisfactory; a blurred negative will not yield a good picture, and a mass of blood clots does not heighten artistic effect, however true to life it may be. With many of the pictures, however, nothing could be more satisfactory as to clearness of detail and accuracy of representation. This is especially true of those which illustrate the various incidents of the pregnant state and the various presentations of the fœtus in the pelvis.

In the chapter on the pathology of pregnancy the predilection of the authors for the operation of version is manifest. A preference for this method of delivery is expressed, even in the presence of heart lesions. Unless the other conditions are very favorable, we doubt the advantage of this operation over the skillful use of the forceps when heart lesions are present. In other words, the degree of violence inflicted with the forceps in a case requiring such unusual care and watchfulness as one with cardiac complications is likely to be less than that produced by manual dilatation and version. The stress which is laid upon the desirability of frequent examinations of the urine during the pregnant state is commendable; the matter is too often neglected in ordinary obstetric practice. The views expressed in regard to the various pathological conditions of pregnancy are clear and decided. Noteworthy also is the statement that "a prerequisite to the conduct of labor is the diagnosis of the presentation and the position of the fœtus." How often a normal presentation is taken for granted; indeed, how comparatively infrequently is a diagnosis determined prior to the close of the second stage of labor!

The precursory signs of labor, which are referred to in detail, are not unvarying in occurrence; indeed, the failure of one or the other of them to appear need not be a matter of special surprise or apprehension.

The chapter on the pathological puerperium is in many respects both judicious and judicial, but with some of the statements we are compelled to take issue. The distinction between sapræmia and septicæmia does not seem to us to have been sufficiently well defined. We admit that the distinction is rather shadowy at best, and perhaps Duncan would not have made use of the term if he had waited twenty years. It is, however, frequently employed by even the most recent writers, and, as with some of them it involves an important element in puerperal infection, a rather more extended consideration of the matter than is here given would not have been out of place.

The argument concerning atmospheric infection does not impress us as conclusive. It is stated: "She (the puerpera) may develop either of these acute infectious diseases [erysipelas, measles, scarlet fever, etc.] in an infected room after having been delivered and subsequently treated aseptically, but they run their proper course, only modifying the puerperal state in so far as arrest of retrograde metamorphosis is concerned. If she die, the lesions peculiar to the intercurrent disease will be found. Aside from arrest of involution of the sexual organs, we may find nothing suggestive of septicæmia." What, then, is the authors' conception of septicæmia? They admit, though apparently with some diffidence, a foundation of pathogenic organisms. If the system is thus infected, whether by the specific organism of erysipelas or by the less known organisms of measles and scarlet fever, would there not be a condition of septicæmia, whether the accidental streptococcus and staphylococcus were discovered or not? The term and the notion of septicæmia, as stated most lucidly by Thomas ten years ago, seem to us to cover the whole field of puerperal infection, no matter how acquired or with what combination of pathogenic germs. Indeed, in a subsequent portion of the chapter the following comprehensive statement is made: "Pathologically, the affection [septicæmia] entails simply the same changes as those which follow infection of a wound in any part of the body aside from the puerperal state." The statement that self-infection of the puerpera is not possible is also not conclusive, though we admit that the occurrence may be rare. Suppose a woman has a puerperium apparently normal until the tenth or eleventh day; she then has a chill and subsequently gives evidence of abscess in the broad ligament with constitutional symptoms. This is not spontaneous generation of disease, but decomposition possibly due to the influence of organisms *in utero* or *in vagina* which were present at the time of parturition. Absorption by way of the lymphatic channels has followed; at least so the condition has appeared to us under the conditions given.

The conservative statements with reference to hysterectomy during the puerperal state are in harmony with our own opinions. We wish the fact had been enunciated with even greater positiveness that hysterectomy at such a time is rarely indicated. It requires no little acumen to determine when the limit of local infection has been passed and general infection has occurred, and, consequently, when hysterectomy will fail to check the course of the infective process.

Les suppurations de l'apophyse mastoïde et leur traitement. Par A. Broca, chirurgien des hôpitaux de Paris, et F. Lubet-Barbon, ancien interne des hôpitaux de Paris. Paris: G. Steinheil, 1895. Pp. 259. [Prix, 6 *fr.*]

The authors present a practical and modern treatise concerning surgical operations on the mastoid process. Opening the mastoid cells in acute or chronic inflammation of the middle ear is an undertaking entitled to much serious consideration, and any new and additional help in its study should meet with a hearty welcome. The authors hold that the discharge coming from the ear in acute purulent otitis media originates in the mastoid cells in the greater number of cases. When the passage to the antrum is free, the pus easily finds its way into the middle ear. In support of this view they cite their observations of cases where after paracentesis of the drumhead the flow of pus was at first slight, but afterward rapidly became abundant as the purulent matter contained in the mastoid cells found a vent. Cases are also quite frequently observed in which after the discharge from the external auditory canal has suddenly ceased, and the perforation in the drumhead has entirely healed, a mastoiditis will develop. Such phenomena are due, say the authors, to an occlusion of the passage leading to the antrum. The pus confined in the mastoid cells, from which now there is no natural escape, will force its way externally, giving rise to the mastoid abscess (retro-auricular). In rare instances it penetrates to the internal surface of the process and follows in a downward direction the course of the digastric or that of the sterno-cleido-mastoid muscle. That portion of the work which is devoted to symptoms, diagnosis, etc., is well worth careful study. Diagnosis, say the authors, in order to be complete, requires the solution of two problems: Firstly, Does there exist a mastoid lesion? Secondly, Has this lesion its origin in the ear? The discussion of these points in diagnosis shows much painstaking thought and research, and is one of the most interesting parts of the book. Under the head of treatment are considered mastoiditis resulting from acute otitis and acute mastoiditis complicating chronic otitis media. The different methods of opening the mastoid are carefully detailed, and the whole subject of the surgery of this region is well presented from the time of the first operation by Jean Riolan (1649), who trephined the process for the relief of deafness. Space will not permit of a further discussion of this interesting volume, but aurists will find in its careful perusal much to repay them.

The Diseases of Children, Medical and Surgical. By Henry Ashby, M. D. Lond., F. R. C. P., Physician to the General Hospital for Sick Children, Manchester, etc., and G. A. Wright, B. A., M. B. Oxon., F. R. C. S. Eng., Assistant Surgeon to the Manchester Royal Infirmary, etc. Third Edition, edited for American Students by William Perry Northrup, A. M., M. D., Adjunct Professor of Diseases of Children, Bellevue Hospital Medical College, etc. New York, London, and Bombay: Longmans, Green, & Co., 1896. Pp. xxiii–840.

The changes in the new edition of this admirable textbook are largely those which have been rendered necessary by the scientific progress of the last few years. The section on infant feeding has been much improved by the substitution of more definite directions for a somewhat theoretical discussion of certain phases of the subject, especially that of the modification of cow's milk. The anæmias are treated of more at length and in accordance with the newer methods of blood examination. Much that is of value has also been added to the section on chronic heart disease.

In the appendix attention is given by the American editor to the use of the diphtheria antitoxine, but we regret to note an unfortunate typographical error on page 772, by which eight hundred cubic centimetres instead of eight cubic centimetres of serum are recommended as the proper amount to inject under certain circumstances. This is followed by abstracts from an important paper by the editor upon the subject of intubation, in which mention is made of recent modifications in the O'Dwyer instruments for use in special cases. Looking through the excellent list of formulæ, we notice the well-known English tendency to incorporate the spirit of chloroform in nearly every prescription where it is not incompatible or contraindicated.

Covering, as it does, both the surgical and the medical diseases of childhood, and especially now that its subject matter has been brought up to date, this volume maintains its previous reputation as one of the best text-books upon pædiatrics for the general practitioner.

Electro-therapeutical Practice. A Ready Reference Guide for Physicians in the Use of Electricity. By Charles S. Neiswanger, Ph. G., Professor of Electro-physics, Post-graduate School of Chicago. Chicago: E. H. Colegrove & Co., 1895. Pp. 5 to 80. [Price, $2.]

This little work aims to present the practical facts of electro-therapeutics in a concise and definite form. It is made up of a list of medical and surgical affections, alphabetically arranged, with a synopsis of the electrical treatment recommended as appropriate to each condition. The various electrodes referred to in the text are illustrated by several pages of cuts at the end of the book.

The author is careful to state that "it is not intended to convey the idea that electricity is a specific for the various pathological conditions mentioned," but no attempt is made to indicate the relative value of electrical as compared with other forms of treatment.

The Conditions of Radical Cure in Cancer. Tumors of the Breast which are Dispersible without Operation. The Conversion of Benign Tumors into Cancer. The Practical Outcome of Recent Researches on Cancer. Reprinted Papers. By Herbert Snow, M. D., London, etc.

In the reprinting of these papers in one volume, Dr. Snow has done the profession a service, for no one has studied tumors more closely or to better effect than he. In the first paper he shows the path along which surgeons should be guided in operating upon malignant growths, and illustrates his conclusions by histories of cases. The second paper, supported by clinical evidence, elucidates differential points in diagnosis. In the third article attention is called to the frequently observed change from a benign to a malignant growth, and the surgeon is cautioned to be duly watchful of suspicious cases. The fourth paper deals with practical teachings derived from the latest biological studies of sarcomatous and carcinomatous neoplasms.

Diet in Sickness and in Health. By Mrs. Ernest Hart, formerly Student of the Faculty of Medicine of Paris, etc. With an Introduction by Sir Henry Thompson, F. R. C. S., M. B., London. London: The Scientific Press, 1895. Pp. xii–219. [Price, 3*s.* 6*d.*]

In many respects this little book is unique, for we are aware of no other which, in so small a compass, presents what

is necessary of dietetic physiology for the information of lay readers, and expressed in words which they can understand. Furthermore, no work so well instructs the non-professional in disease processes and their food relations, and combines with its scientific teachings on disease the very practical culinary directions which exert so important an influence upon the cure. The scope of the work is well defined in the preface, for there the writer says: "In presenting this book to the public I am actuated by the hope that it will prove useful to those who are sick and to those who have to nurse, feed, and prescribe for the sick, and that it will aid the healthy to preserve health. Believing that lay readers will act with greater intelligence if they understand the *rationale* of a diet, I have briefly described in each case the accepted causation of the disease and the reasons for the special diet prescribed. Medical men will also, I trust, find the dietaries and recipes practically useful and likely to save them trouble in directing the dietetic treatment of patients."

That so laudatory an introduction of the work has been written for it by Sir Henry Thompson must indeed be a satisfaction to the author, and we wish that our indorsement might bear with it so much of weight as his, for we heartily express our admiration for a work which is so unusual and which will be so useful. To write of science for the instruction of the non-scientific is ever a difficult task—this experience has taught us—but in some happy way the author has acquired the necessary power of interpretation, and the result is the more remarkable because in the interpretation the original has lost none of its accuracy and dignity, and the occasional occurrence of such technical words as hypertrophy is simply an evidence of the difficulty which attends a task like this. It is the true science of the work as well as its culinary wisdom which will make it so valuable and interesting to the physician.

It would not be just to fail to point out the inaccuracies of the book, but we do it in no fault-finding spirit and with pleasure that they are so few. To say that "a draught of fluid is useful after dinner to wash any undigested particles out of the stomach" is surely erroneous, for gastric digestion is no more than begun "after dinner," and washing the stomach at that time would certainly be unphysiological, unless it were far longer after dinner than the expression would seem to indicate. Diabetes the writer attributes solely to a morbid condition of the liver, saying, "Now it is obvious that, if by some morbid change in the liver cells they have lost the power of arresting the sugar and converting it into glycogen, the sugar will pass into the general circulation, and that it will appear in the urine. This is what takes place in diabetes." True, perhaps, so far as it goes, but certainly this is unjust to the pancreas. The opening words on scrofula are singularly unfortunate—"This is a disease which is supposed to be hereditary and is stated by some to be allied to consumption. A scrofulous child does not, however, often become consumptive." Perhaps not in the pulmonary sense, but the scrofulous child in the true tuberculous sense does not often become consumptive, because he is consumptive already. Of typhoid bacilli she says, "by their irritating presence, as well as by the poisonous substance which they *excrete*," etc. That the toxine of the typhoid bacilli is excrementitious is yet to be proved. One error we marvel at, and yet it is one which is unfortunately too often made, and that is the use of the word rickets in the plural, for "rickets *prove* fatal" appears on page 181. We wish that writers would cease to so misuse the word rickets and its fellow-sufferer therapeutics, neither of which is entitled to the distinction of plurality. But after all these mistakes are few, and, as compared with the excellences of the book, they are insignificant. We have heartily enjoyed the reading of this book, and we have derived benefit from it as well. We commend it cordially to the attention of all practitioners, for we believe that both to them and to their patients it may be of the greatest service.

Modern Medicine and Homœopathy. Two Addresses by John B. Roberts, A. M., M. D. Philadelphia: The Edwards & Docker Company, 1895. Pp. i–vi—7 to 69.

This little volume contains two presidential addresses; one on Points of Similarity Between Us and Homœopathic Physicians, the other on The Present Attitude of Modern Medicine and Physicians toward Homœopathy. The papers are conservative and dignified in the highest degree, and nobody who reads them can doubt how firm the writer is in his convictions and how uncompromising in his "regularity," and yet the breadth and liberality of all he says are in most admirable contrast with the conduct of those who have not yet learned that the best way to put out a fire is not necessarily to blow at it. In some particulars the author is perhaps too charitable in his thoughts, but that is a nobler quality than its opposite and one less likely to be abused. In some respects, too, we think him mistaken, but we firmly agree to the wisdom of his position, believing that, even if we are convinced of the errors of homœopathy, nothing is gained by abusing its advocates, but, on the other hand, much is lost both to them and to us. We wish that many may read this book, for indeed it must be a benefit alike to the non-sectarian and to the homœopath.

The Middlesex Hospital. Reports of the Medical, Surgical, and Pathological Registrars for the Year 1894.

It seems strange that, with the excellent examples which various of the English hospitals have set us in the matter of their reports, the hospital authorities of this country should so long have failed to profit by it. It can not be that they do not recognize the advantages which are to be derived from a rightly constructed report, for these advantages are as self-evident as they are incalculable, and yet year after year these hospital authorities have gone on storing up the scientific wealth which their history books contain without a thought of the benefit of which its publication would be to humanity, or at least without the evidence of that thought. And so year after year the medical man has continued to read in the reports of the larger number of our hospitals, not the medical records of the institutions, the detailed and classified descriptions of this disease and that injury, the results of various forms of treatment, the presentations of unusual diseases and conditions; but in their stead long lists of donations of books, papers, flowers, turkeys, and similar commodities, or perhaps a list of endowed beds, or the price of various food stuffs, with the average cost of feeding patients, or long lists of religious beliefs, color, nativity, civil condition, and vitally important information as to how many patients paid their board and how many did not; the sole medical information too often being simply a tabulation of recoveries and deaths. A hospital is, of course, a business corporation, and as such must furnish a business report, but it is something more at the same time, and we really can not see why the publication of a formal and—to most readers—useless report, no matter how important it may be to a few, should render unnecessary or should preclude the publication of the medical facts which are of such vital importance, not only to medical men, but to everybody. At last, however, there seems a glimmering of a tendency among our hospitals to realize the importance of

this matter and to act upon it. In the past few years a number of them have sent forth reports of much scientific value, and recently a hospital in a neighboring city published a report which in its excellence was fairly a revelation. And yet these hospitals are the few, and the many still slumber on. It is when we peruse a report like this of the Middlesex Hospital that we become especially alive to the shortcomings of our own hospitals in this respect, and our feeling is one of regret and almost of mortification. The report is not unusual in any way as compared with previous reports of the same series. It is even less interesting than that for 1893, but it contains a vast amount of valuable information and teaching, and with its predecessors it affords for all who desire it a record of medical and surgical facts the educational value of which is incalculable. And with us that information might forever remain unpublished.

A Handbook of Obstetric Nursing for Nurses, Students, and Mothers. Comprising the Course of Instruction in Obstetric Nursing given to the Pupils of the Training School for Nurses connected with the Woman's Hospital of Philadelphia. By Anna M. Fullerton, M. D., Clinical Professor of Gynæcology in the Woman's Medical College of Pennsylvania. Fourth Revised Edition. Illustrated. Philadelphia: P. Blakiston, Son, & Co., 1895. Pp. xiv–17 to 254. [Price, $1.]

We wish, after much long-suffering silence, to utter one protest against books of this sort, whose aim apparently is to make medical students of nurses. The work under consideration attempts to teach nurses quite as much as is expected from medical students, and at the same time it does not teach it in an altogether dignified or very scientific manner. It is worse than useless to attempt to teach nurses a great deal which is not their business, which they never learn accurately, and which ruins almost every woman for a nurse who comes under its system. Nurses should know only enough theoretical medicine to render their work intelligent. It has been our experience that the most satisfactory and reliable nurses are those women who are naturally intelligent, but are most ignorant of the contents of ordinary books of nursing. It is such teaching as these books set forth that makes the physician and the surgeon of to-day doubtful as to whether the majority of "trained nurses" are not more trouble than they are worth.

Manual of Childbed Nursing. By Charles Jewett, A. M., M. D., Professor of Obstetrics and Diseases of Children at the Long Island College Hospital. Fourth Edition, revised and enlarged. New York: Bailey & Fairchild Co., 1895. Pp. 60. [Price, 50 cents.]

It is a pleasure to read such a book as Dr. Jewett's. Its only object seems to be to teach both obstetric nurses and mothers every practical thing which can be of service to them, and to make of both good nurses. This book is in such marked contrast to many of similar scope, with their element of pedantry, that its perusal is a genuine pleasure. Physicians, as well as nurses and mothers, will find much in it of value. We can not refrain from thanking Dr. Jewett for giving his attention to a work of this kind.

Obstetrical Pocket Phantom. By Dr. K. Shibata, Specialist in Gynæcology and Obstetrics, Tokio, Japan, etc. Preface by Professor Franz von Winckel. With Eight Illustrations, One Pelvis, and Two Jointed Manikins. Translated from the Third Edition by Ada Howard-Audenried, M. D., Physician to the Children's Clinic at the Woman's Hospital, Philadelphia. Philadelphia: P. Blakiston, Son, & Co., 1895. Pp. 21. [Price, $1.]

This small handbook has on its last page a practical pelvis with small, jointed paper manikins for use in conjunction therewith. In this respect the book is useful to teachers and students of obstetrics. Its nomenclature is so distinctly German, however, as to make it practically useless for any other purpose in this country.

Spectacles and Eyeglasses. Their Forms, Mounting, and Proper Adjustment. By R. J. Phillips, M. D., Ophthalmic Surgeon to the Presbyterian Hospital in Philadelphia, etc. Second Edition, revised. With Forty-nine Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1895. Pp. 105. [Price, $1.]

This little book contains much information of practical value to an ophthalmologist who is so situated as to be unable to send his patients directly to a competent optician, and it is not surprising that a second edition has been called for in so short a time as three years. The portion relating to prisms has been rewritten.

The proper adjustment of the frames and mountings of spectacles and eyeglasses is of such great importance that it can hardly be considered second even to the use of the proper glass, because, if the proper glass is placed before the eye in a faulty position, the effect of an improper lens is produced. Hence this part of the work should be done with as great a degree of skill as the other, if possible, and the city ophthalmologist finds it most advantageous to send his patients directly to an optician, who has obtained the requisite skill in the only possible way—by years spent in the workshop. Because skill in the use of tools can be gained in this way alone there is an exceedingly small number of competent opticians to be found in a city where opticians' signs abound, and the natural inference is that a still smaller number can be found in smaller places. That this inference is correct is demonstrated by the fact that ophthalmologists in the towns and smaller cities find it to their interest to send their prescriptions by mail to competent opticians in the large cities. These opticians must rely on the data furnished in the prescription as their only guide, and it therefore becomes of the greatest importance to the ophthalmologist to learn to prescribe frames rightly. For the finer points of adjustment, which must be made to the features of the patient, the physician must rely upon himself, and should make himself as proficient as possible in the use of the necessary tools. No book can take the place of the workshop for this purpose, but this one certainly does furnish directions and suggestions which must prove of great assistance.

BOOKS, ETC., RECEIVED.

A Manual of Medical Jurisprudence and Toxicology. By Henry C. Chapman, M. D., Professor of Institutes of Medicine and Medical Jurisprudence in the Jefferson Medical College of Philadelphia, etc. Second Edition, revised. With Fifty-five Illustrations and Three Plates in Colors. Philadelphia: W. B. Saunders, 1896. Pp. xv–17 to 254. [Price, $1.50.]

The Yearbook of Treatment for 1896. A Critical Review for Practitioners of Medicine and Surgery. Philadelphia: Lea Brothers & Co., 1896. Pp. viii–476. [Price, $1.50.]

Syphilis in the Middle Ages and in Modern Times. By Dr. F. Buret, of Paris, France. Translated from the French, with Notes, by A. H. Ohmann-Dumesnil, M. D., Professor of Dermatology and Syphilology in the Marion-Sims College of

Medicine, etc. In Three Volumes. Volumes II and III. Philadelphia: The F. A. Davis Company, 1895. Pp. xxvi–289. [Price, $1.50.]

The Principles of Bacteriology. A Practical Manual for Students and Physicians. By A. C. Abbott, M. D., First Assistant, Laboratory of Hygiene, University of Pennsylvania, Philadelphia. Third Edition, enlarged and thoroughly revised. With Ninety-eight Illustrations, of which Seventeen are Colored. Philadelphia: Lea Brothers & Co., 1895. Pp. xii–13 to 493.

A Pictorial Atlas of Skin Diseases and Syphilitic Affections in Photo-lithochromes from Models in the Museum of the Saint Louis Hospital, Paris. With Explanatory Woodcuts and Text by Ernest Besnier, Physician to the Saint Louis Hospital, etc.; Tenneson, Physician to the Saint Louis Hospital; Hallopeau, Member of the Academy of Medicine, etc., and Du Castel, Physician to the Saint Louis Hospital. With the Co-operation of Henri Feulard, Curator of the Museum, and Leon Jacquet, Secretary of the Dermatological Society of France. Edited and annotated by J. J. Pringle, M. B., F. R. C. P., Assistant Physician to and Physician to the Department for Diseases of the Skin at the Middlesex Hospital, London. London: F. J. Rebman. Philadelphia: W. B. Saunders, 1895. Part II. Pp. 29 to 53. [Price, $3 each part.]

Transactions of the Lucerne County Medical Society for the Year ending December 31, 1895.

Operative Treatment of Aneurysms of the Third Portion of the Subclavian Artery. By Edmond Souchon, M. D., of New Orleans. [Reprinted from the *Annals of Surgery*.]

On the Morbid Heredity and Predisposition to Insanity of the Man of Genius. By Warren L. Babcock, M. D., of Ogdensburgh, N. Y. [Reprinted from the *Journal of Nervous and Mental Diseases*.]

Sleep in its Relation to Diseases of the Skin. By L. Duncan Bulkley, M. D. [Reprinted from the *Medical Record*.]

Vivisection. By Mrs. Kinzie Bates, of Detroit. Read before the Twentieth Century Club of Detroit, November 7, 1895.

Ueber Nikotianaseife. Von Dr. P. Taenzer, Bremen. [Sonderabdruck aus der *Monatshefte für praktische Dermatologie*.]

Epithelioma primitif de l'uréthre. Par Melville Wassermann, docteur des Facultés de médecine de Paris et de Heidelberg, etc. Paris: G. Steinheil, 1895. Pp. 7 to 163.

Miscellany.

Recent Advances in the Methods of Local Anæsthesia.—This is the subject of a paper by Dr. F. B. Lund, which is published in the *Boston Medical and Surgical Journal* for February 6th. The desirability, he says, of a local anæsthetic which should be free from danger has led to active endeavor on the part of surgeons to discover some such agent. Up to the year 1884 the only methods of local anæsthesia depended upon the numbing effect of cold upon the nerves, and consisted in freezing the part to be operated upon, either by the application of freezing mixtures or by spraying with some rapidly evaporating ethereal compound, which possessed the disadvantage of being attended by no slight degree of pain, and it could be applied only on regions of the most limited area, and sufficed only for the most rapid operations.

The anæsthesia which was produced by cocaine applied to the mucous membranes was found to be attended with no such disadvantages, and, although the drug was poisonous, it was found that sufficient local anæsthesia could be produced without its absorption in poisonous amounts.

Attempts were at once made to produce local anæsthesia of the skin and subcutaneous tissues by the external application of solutions of cocaine, but it was found that sufficient absorption did not take place to produce anæsthesia. The introduction of cocaine solutions by electrolysis was tried without success. To an American physician, Dr. Leonard J. Corning, of New York, says the author, is due the credit of demonstrating the fact that solutions of cocaine injected subcutaneously along the trunk of a sensory nerve would produce local anæsthesia in the area of its distribution. It was found difficult, however, to base a satisfactory procedure upon this principle. As applied, it consisted of the injection of a few minims of from a two- to a five-per-cent. solution of cocaine under the skin in four or five places surrounding the operative field, and so situated as to reach, if possible, the branches of the sensory nerves which supplied it. It was found necessary to wait five or ten minutes for the drug to be diffused among the tissues, and so to be brought in contact with the various nerve filaments which supplied the part. Operations performed after this method were often entirely successful, but often for some unknown reason the anæsthetic effect failed, to the great chagrin of the surgeon. This failure was due to the well-known fact of the abundant anastomosis of terminal nerve filaments. Although one or more of the nerve trunks supplying the area might be anæsthetized, it often happened that one running deeper through the tissues or coming from a different direction furnished, through its terminal anastomosis, a path for the conduction of pain.

Dr. Corning also demonstrated the fact that in suitable cases the application of an elastic ligature, by imprisoning the anæsthetic fluid in the part, deepened and prolonged the anæsthesia. Sometimes, however, even where this precaution was adopted, the result was unsatisfactory, a fact which was probably due to the circumstance that some nerve trunk sent anastomosing filaments which were not reached by the anæsthetic fluid, and served to conduct the sensation of pain.

Another reason for failure, says Dr. Lund, was the mistake sometimes made by the surgeon of making the first needle puncture directly into the inflamed tissue, a procedure almost as brutal as the performance of the operation without the anæsthetic. A large number of surgeons having been for some such reason unsuccessful in their first trials with local anæsthesia by cocaine, gave the matter up without further study or trial, and either employed general anæsthesia for all minor operations or operated without any anæsthetic. Certain men, however, notably Reclus in France, Landerer in Germany, and Halsted in this country, persisted in its employment, and developed the procedure. In Boston Dr. S. J. Mixter was one of the first to demonstrate in practice the advantages of local anæsthesia by solutions of cocaine.

The occasional reports of fatalities from poisoning by cocaine employed as a local anæsthetic stigmatized the method in the minds of those not familiar with its use, although several surgeons, both in this country and abroad, had had no fatalities, and had found the appearance of premonitory symptoms of poisoning an exceedingly rare event.

Those who had the most experience in the method, says the author, realized its limits, and after the amount of cocaine had been injected which it was thought safe to employ, and the operative field had to be further extended, either had re-

course to ether, or continued the operation without anæsthesia, both of which expedients were of the nature of confessions of defeat. In certain instances it was found that after anæsthesia had been established by cocaine solutions, the anæsthetic area could be extended by injecting pure water, beginning within the infiltrated area. The injection of water without previous cocainization was, however, he says, an exceedingly painful process.

Such was the condition of our knowledge of the action of cocaine when Schleich, of Berlin, published a monograph, which, says Dr. Lund, placed local anæsthesia by the injection of anæsthetic fluids upon a scientific basis, and rendered its more extended application safe and feasible. This method has since been given extended trial, and, while it has not and probably will not, as its author thinks probable, become of such general application as to render the employment of a general anæsthetic a surgical rarity, it has none the less widened in some degree the field for the safe and efficient use of local anæsthesia, and enabled operations to be performed without pain or danger in cases where a general anæsthetic was contraindicated. To Schleich, he says, is due the credit of demonstrating that the intracutaneous injection of various drugs (not alone cocaine) in very dilute solution produced local anæsthesia. Instead of the effect depending solely upon the drug itself, the anæsthesia was found to be due to the pressure of the infiltrating fluid upon the nerve filaments, the artificial anæmia which it produced, and the comparatively low temperature at which it was injected.

These facts, which are significant in that they enable us to dispense with the cocaine except in proportions too small to cause any apprehension of danger, were gradually arrived at by Schleich in the course of careful experimentation upon himself, his assistants, and nurses. Beginning by gradually diminishing the strength of the cocaine solutions employed, and following the principle of endermatic injection, he found that in the white wheal produced by the injection of a syringeful of an 0·02-per-cent. solution of cocaine there was absolute insensibility to pain, and also that no pain was present during the injection.

With regard to the employment of infiltration anæsthesia in major operations, laparotomies, and the like, which Schleich advises, the general verdict will, Dr. Lund thinks, be against him. Severe and difficult operations it is not wise to complicate further by the addition of the inconvenient necessity of constantly stopping the operation to reinfiltrate the operative field. It is also not always desirable in these cases to have the patient a witness to the mental and physical efforts of the surgeon, even if they are attended with no pain.

In cases, however, when the condition of the heart, shock, or the danger from vomiting (for example, strangulated hernia) renders ether dangerous, the infiltration anæsthesia is destined, he thinks, to be of immense advantage. Here, he says, the surgeon is not justified in regarding the slight inconvenience of maintaining local anæsthesia in comparison with the great advantage of doing away with the general anæsthetic; and by the infiltration method properly applied, without the danger of giving a poisonous dose of cocaine, a much more satisfactory local anæsthesia of the operative field may be attained.

The author thinks there is no reason why such operations as kelotomy for strangulated hernia, tracheotomy, and resection of a rib for empyema, for instance, can not be performed under infiltration anæsthesia with little or no pain to the patient, and there is every reason, he says, why, this being true, the use of ether in cases of this class where it becomes a serious complication should be avoided.

In regard to the practical advantages of Schleich's method of local anæsthesia, then, it may be said that it has increased the safety and certainty of success in the employment of local anæsthesia in minor operations, and that it has made possible the safe and comparatively painless performance of major operations in which for any reason a general anæsthetic is contraindicated or undesirable.

Dr. Lund thinks that the advantages of the general anæsthetic in long and complicated operations, and even in short operations where muscular relaxation is desired—for instance, the reduction of dislocations or of deformities due to fracture, etc.—are so great that he can not agree with the discoverer of the method, that it is destined almost to displace the use of general anæsthesia.

The Treatment of Puerperal Septicæmia by Antistreptococcous Serum.—In an article on this subject, published in the *Lyon médical* for January 26th, M. Vinay remarks that, in spite of the greatest care and the strictest antisepsis, many confinement cases are complicated with septic fever, although they may be cases of self-infection only, in which the fever develops during labor, before any intervention, or even before the rupture of the amniotic sac. It is justifiable then, says the author, to employ the various measures at our command in order to diminish the mortality from a disease which still remains a menace to women.

The introduction of animal serum into therapeutics has led, says M. Vinay, to good results in the various affections which are caused by the streptococcus, and in the treatment of puerperal septicæmia favorable results may be expected from the new method.

The author gives the histories of four cases in which this treatment has been employed, with the following results:

In the first case the immediate and favorable influence of the serum was evident. The temperature fell rapidly, the fever disappeared on the third day after the first injection, and the amelioration of the general condition was coincident with the fall of temperature. Without doubt, says M. Vinay, recovery was not definitive at the time, for a purulent collection formed in the Falloppian tubes; but, he says, it may be concluded, in view of the dangerous symptoms, that the results would have been rapidly fatal without the administration of the serum.

In the second case there were present the majority of conditions that favor infection, which was produced during a labor that was disturbed by complications, which seemed to proceed from the vagina and from the cervix rather than from the body of the uterus. M. Vinay does not deny that the patient would probably have recovered without the administration of the serum, but it undoubtedly caused rapid apyrexia and consequent restoration to health.

In the third case, which terminated fatally, the treatment was not begun until three weeks after confinement, and the symptoms were then so grave as to preclude the idea of recovery. The lesions found at the autopsy showed that all the organs were degenerated; that it was a case of grave septicæmia without localization and without suppuration. Perhaps, says the author, if the treatment had been begun earlier the results would have been different, as it was a case which seemed particularly amenable to this mode of treatment.

In the fourth case the treatment was not directed against the septicæmia, but against one of its complications—puerperal insanity. No results followed the administration of the serum, and the psychosis rapidly became chronic.

The employment of antistreptococcous serum, says M.

Vinay, does not apply to the general condition only; it aims to modify the infection of the blood when the economy is invaded at the time by the streptococcus or by its toxines. This method, however, he says, must not be exclusively employed in these cases, at least in the beginning. Local treatment of the infected mucous membranes and of vaginal ulcers, antiseptic injections, and especially curetting, are equally important. When the symptoms are recent the first indication is to suppress the original foci, and the general infection may be combated afterward.

This serum may not be efficacious in all forms of puerperal septicæmia, as the microbian agents which cause it are of many varieties. Besides the streptococcus, there are the staphylococcus, the *Bacillus coli*, the saphrophytes of putrefaction, and, exceptionally, the gonococcus. If the serum has no influence on the latter, bacterial researches should be made in order to ascertain the nature of the infection. The most serious infections are caused by the streptococcus, and when the symptoms begin with a chill, when the temperature is 104° F., and when the general condition is grave it may be concluded that the latter agent is the cause. The others usually show their presence by less marked symptoms. However, says M. Vinay, there is nothing absolute with regard to this, for attention has been called to fatal cases of infection caused by the *Bacillus coli;* but, in a general way, it may be affirmed that in all cases where the symptoms rapidly become marked the presence of the streptococcus is almost certain.

M. Vinay concludes from his researches that we possess in serum therapy an efficacious means of combating the severe forms of puerperal septicæmia.

Poisoning Due to Injections of Creosote.—At a recent meeting of the Paris *Société médicale des hôpitaux*, a report of which appears in the *Gazette hebdomadaire de médecine et de chirurgie* for January 23d, M. Faisans related the following case of poisoning: The patient was a man, twenty-six years old, who was suffering from pulmonary tuberculosis in the second stage. He had been treated for three years by injections of oil in which creosote had been incorporated, and the treatment had been followed by a notable amelioration, although the cough had persisted.

On the 10th of December, 1895, the patient entered the hospital with pseudo-meningeal symptoms. Three weeks before his entrance he had begun the treatment again under M. Burlureaux's direction, and he had received every day during that time doses of a one-in-fifteen solution, beginning with one hundred and fifty grains on the first day and increasing the dose ten grains each time until four ounces and a quarter had been reached. An examination of the urine had shown it to be dark, and on the following day the dose was reduced to nine hundred grains.

Two days afterward the patient had been seized with violent agitation and delirium, which had alternated with a semi-comatose condition. It had been impossible, said M. Faisans, to obtain any information from him in regard to the last injection. A bottle containing the solution, also a needle, had been found near him, and it was supposed that he had again taken four ounces and a quarter of the solution, which quantity would contain about one hundred and forty-three grains of creosote.

On examination, considerable dilatation of the pupils had been observed; the pulse had been 100, and regular; the temperature, 100·2° F. There had been a very marked general hyperæsthesia, and the patient had appeared to suffer, especially in the abdomen and in the head.

It had been evident that the man had vomited, and M. Burlureaux had given a diagnosis of tuberculous meningitis, and had sent him to the hospital, where another examination had shown the eyes to be greatly dilated, the right one more so than the left; there had been no strabismus or any limited paralysis, but hyperæsthesia had been marked. On the following day the symptoms had changed for the better, and three days later the man had left the hospital completely restored.

M. Faisans stated that it could not have been a case of tuberculous meningitis, as the essential symptoms of that disease had not been present. However, he said, when grave cerebral or cerebro-spinal symptoms supervened suddenly in a manifestly tuberculous subject, it was not surprising that the diagnosis of tuberculous meningitis should be made, and the mistake had proceeded, without doubt, from that fact.

Two cases of this nature had been observed by M. Burlureaux in which the evolution of the symptoms had been very rapid, and recovery had taken place in a few days. From this, said M. Faisans, it must not be concluded that creosote poisoning was invariably benign, or that it never led to fatal results.

Aside from the usual toxic symptoms, creosote in large doses caused cerebro-spinal symptoms which constituted a new variety of pseudo-meningitis. For this reason we should be careful with regard to the employment of a drug the indications of which were restricted and the contraindications numerous.

Intermenstrual Pain.—The *Edinburgh Medical Journal* for February contains an article on this subject, by Dr. J. Halliday Croom, in which he considers a form of dysmenorrhœa which occurs not at the period when the external manifestation of menstruation takes place, but at mid-term; a condition, he says, to which the Germans have given the appropriate name of intermenstrual pain. Whatever name may be applied to it, the condition is a well-marked one, in which an attack of dysmenorrhœa proper is simulated, without, necessarily, any external hæmorrhage. It does not at all resemble the pre-menstrual pain or the continued pain associated with inflamed or diseased ovaries, but it is a condition which occurs definitely each month, at a definite period, and for a definite number of days.

Dr. Croom relates the histories of several cases which have come under his observation, of which the following are, he says, fairly typical cases: The first was that of a young girl who complained of acute pain, sometimes in one side and sometimes in the other, occurring with the utmost regularity fourteen or fifteen days after menstruation. This had continued ever since she was fourteen years old, at which time she had a very severe attack of scarlet fever. There was no abnormity in the ovaries, the tubes, or the uterus. She menstruated regularly and without pain, but every month she was obliged to use morphine rather freely in order to avoid the intermenstrual pain.

The second case was that of a woman who was sent to the author for treatment for profuse hæmorrhage associated with marked dysmenorrhœa, in addition to a definite and severe pain occurring between the menstrual periods, about the fifteenth day. The pain was localized on the left side and was occasionally accompanied by a slight discharge, sometimes of blood, sometimes of a clear fluid. On examination, she was found to have a uterus that was enlarged to three inches and a half in length and contained a submucous fibroid on the right side. After continued treatment, says Dr. Croom, including curetting, she was sent home, but returned in a few

months with the symptoms aggravated. It was concluded to remove the appendages in order to arrest the hæmorrhage, which was very profuse. The right ovary was somewhat cystic and the tube thickened; on the left side the ovary was normal, but there was a well-marked hydrosalpinx. It is worthy of note, says the author, as bearing directly upon the case, that the woman was thirty-five years old, and that she had suffered from intermenstrual pain for five years only. It will therefore be seen, he says, that this case differed entirely from the first one, in which the condition had existed from childhood.

Two things, says Dr. Croom, are clear about this case. First, that the condition was distinctly an acquired one. If it had been due to some condition of the ovary, then the intermenstrual pain would have been on the right side; whereas the pain was on the left side, where the ovary was normal. Secondly, if it had been due to painful ovulation occurring independently of menstruation, then the intermenstrual pain would not have been of such recent origin. It is, therefore, by no means unlikely, says the author, that this rare condition may be due to the overdistention of the Falloppian tubes with fluid, and that the intermenstrual pain is associated with its expulsion.

One of the most important contributions to the very limited literature of this subject, says Dr. Croom, is an article by Heinrich Fasbender, published in 1876, in the *Zeitschrift für Geburtshülfe und Frauenkrankheiten.* The case, which he quotes as having occurred in his own experience, presented the following features:

An unmarried woman, twenty-four years old, anæmic, with an anxious cast of countenance, had menstruated regularly since her fourteenth year. The flow was always sparing, and for a few days before its appearance there was a severe pain in the lower part of her abdomen, with gastric disorder, cachexia, and alternate sensations of heat and cold. For the past two years there had occurred, from the fourteenth to the sixteenth day after menstruation, a disorder similar to that which accompanied the ordinary menstrual period, accompanied by a flow of mucus from the vagina so conspicuous as to have caused her to mention it without its being suggested to her. Her nervous system had become much affected by the pain and discomfort which she underwent, so much so that she had symptoms of hysteria and a mental condition bordering on melancholia.

Physical examination showed the presence of an acute anteflexion of the uterus, with chronic endometritis and colpitis, with lesions of the os. Nothing abnormal was found in the uterine annexa. On seeing her again at the time of her intermenstrual pain, Herr Fasbender came to the conclusion that the mucous discharge was most copious when the feeling of heaviness in the pelvis was most marked, pointing to a congestion in the pelvic organs. Fasbender's view of the ætiology of intermenstrual pain, says the author, is that, accepting Pflüger's theory of menstruation, we have in some cases a premature summation of nervous stimuli in the ovary, with the occurrence of ovulation, caused by a delicately organized and excitable state either of the whole nervous system or of the nerves of the ovary, the latter state produced by a pathological condition of the ovary. This abnormal irritability, leading to dehiscence of a follicle some fourteen days before the proper menstrual period, produces the congestive condition of the pelvic organs found in cases examined at such a time.

In the discussion which followed the reading of Herr Fasbender's paper several additional cases were cited and opinions expressed.

Two gentlemen cited cases where the intermenstrual pain had occurred in women suffering from anteflexion of the uterus; and a third suggested the anteflexion as the cause of the intermenstrual pain, the pain being due to contraction of the uterus trying to expel retained blood, etc. To this it was replied that in the observed cases no contractions of the uterus could be discovered, and, further, anteflexion was not present in all cases, while if it were caused by anteflexion, intermenstrual pain would be a much commoner symptom than it was.

This condition with a slight flow of blood is also described by Herr Benicke as occurring in a case where there was a conical cervix with pinhole os, anteflexion of the uterus, and retraction of the utero-sacral ligaments.

From these notes, says Dr. Croom, which, so far as he can discover, include a mention of nearly every case of intermenstrual pain which has been recorded, the condition, it seems to him, can be well considered as having three different manifestations:

1. A group of cases in which there is no external manifestation at all. 2. Those cases where the pain is associated with an escape of blood. 3. Those in which, as in two of his cases and some of the others, the intermenstrual pain is associated with a clear discharge.

It would be absurd, he says, to dogmatize upon the causes which give rise to this condition, or to lay down any hard-and-fast rules as to the pathological conditions necessary to its production, but it seems to him that this classification gives a fair insight into the different states that may lead to the production of this somewhat unusual symptom.

With regard to those cases where no external manifestation accompanies the occurrence of intermenstrual pain, the explanation is probably to be found in the fact that ovulation and menstruation do not in these cases occur simultaneously; that, in addition, owing to the thickening of the capsule of the ovary, or some such cause, dehiscence of the follicle occurs with pain.

Those associated with escape of blood: In all of these it will be observed that there was present more or less endometritis, anteflexion, and enlargement of the uterus, and, he says, so far as he is able to judge, these were simply cases in which a slight intermenstrual flow, due to endometritis, was accompanied by well-marked pain during the passage of clots. Such a condition is well recognized and common, and scarcely, he thinks, should come under the category of intermenstrual pain at all. Still, the term describes adequately enough a set of cases to which the Germans especially have drawn attention.

Lastly, with regard to those cases in which a leucorrhœal discharge is described as occurring with the intermenstrual pain, and where, just before the usual date of the occurrence of the pain, a swollen and fluctuating condition of the tubes was in some cases made out, he thinks there can be no question that the cause of the intermenstrual pain was to be found in hydrops tubæ Falloppii, reaching its full development at mid-term.

The author states that he is well aware that much doubt is now thrown upon the possibility of the existence of what is called intermitting hydrosalpinx or hydrops tubæ profluens, the occasional sudden escape of fluid through a temporarily patulous uterine end, with disappearance and diminution in size of the tubal dilatation. According to some, it is much more likely that these discharges pass, not through the cervix, but by a vaginal fistula communicating with the cyst. Either explanation is compatible, he says, with this view of his.

In one of his cases, says Dr. Croom, in which a removal of

the tubes and ovaries brought about a cessation of the intermenstrual pain, it may be urged that the pain had been ovarian, and that the removal of the hydrops did not lead to its cessation, but the removal of the ovary did. Colicky pain, he says, occurs when the tubes are in such a condition, the contractions of the sac forcing the fluid through a uterine orifice which is only partially closed; the pain also may be due to the discharge of uterine contents, the result of reflex contraction of a necessarily congested uterus. Thus it is more than likely that the pain is really tubal.

The Treatment of Isolated Lupous Nodules by Dilaceration followed by Applications of Zinc Chloride.—In the *Journal des sciences médicales de Lille* for January 18th there is an article by M. Léon Derville, who describes a new mode of treatment, which he calls dilaceration. The procedure is as follows: A scarificator is introduced into the centre of the tubercle and pushed until it is arrested by the cicatricial tissue which surrounds the lupous nodule; a rotatory movement is then rapidly made which tears the tubercular tissue and often removes fragments at the same time. Employed in this manner, says the author, it not only dilacerates the diseased tissue, but it removes a part of it in the same way as a sharp curette does.

After the tubercle has been torn away, a small crystal of zinc chloride is put into the little cavity, and almost immediately the bleeding stops. A small black patch then forms, and this is surrounded by a whitish circle, a small eschar. This becomes dry and forms a crust over the lesion, and under it cicatrization takes place. This crust usually falls off between the tenth and the fifteenth day, leaving only a reddish mark.

The advantages of this process, says M. Derville, are the following: 1. It is scarcely painful, and consequently is well borne by the patients. 2. It does not interfere with the patient's occupation; it leaves a few crusts only on the face, and does not require any dressing. 3. It gives rapid results. It is not rare to see a small nodule destroyed at the first application and replaced by a sclerotic tissue which, by becoming retracted, can have only the most favorable influence on the surrounding tissue.

The disadvantages are that zinc chloride leaves cicatrices, often irregular and prominent, but this, says the author, is of slight importance if they are on the body, but on the face they become deformities, and for this reason it should not be employed on the latter. Another disadvantage is the sclerotic action of zinc chloride on the tissue, which, by becoming shriveled, may cause a shrinking of the natural orifices. If the nodules are situated near the mouth or the nostrils, says the author, other procedures are preferable, except in cases in which the lupous patches are very small.

M. Derville says that he does not maintain the absolute efficacy of this treatment, for recovery after a single application can not be hoped for unless the tubercles are superficial and not very extensive. When they are, the treatment has to be repeated several times. Usually an interval of two weeks should elapse between the applications; at the end of this time the crusts fall off or are easily detached, and dilaceration and cauterization may be resorted to again. This procedure, he says, if used prudently in the beginning, may be of some use in practice; it may cut short a long and tiresome treatment, and also rapidly check a relapse in the same region.

Soluble Phosphate of Bismuth.—An anonymous writer remarks in the *Deutsche Aerzte-Zeitung* for February 1st that the bismuth preparations hitherto in use, the subnitrate, the salicylate, the tannate, etc., have been of a basic nature and in the form of an insoluble powder. They are not readily combined with other drugs; like all powders, they are taken unwillingly; and only a small part of the dose really gets an opportunity to act. On the other hand, he says, "bismutum phosphoricum solubile" is a salt that is easily soluble and contains about twenty per cent. of oxide of bismuth. Even concentrated solutions of it remain clear for some hours, and a solution containing from one to two per cent. of the salt will remain clear for days, but it is rendered turbid by boiling, also by the addition of an acid or of an alkali. The reaction of such a solution is feebly alkaline, and its taste is not very pronounced. Soluble bismuth phosphate has no effect on the micro-organism of anthrax or on other like resistant germs, but it seems capable of arresting the development of the *Bacterium coli*. Experiments on animals have shown it to be harmless. The dose necessary in its therapeutical employment is much smaller than that of any of the powdery preparations of bismuth; from three to eight grains are to be given three times a day. During the whole of the last summer it was used in the Emperor and Empress Frederick Children's Hospital as a remedy for cholera infantum with good results. In private practice Dr. O. Dörffler used the following formula:

Soluble bismuth phosphate	1½ to 2 parts;
Distilled water	90 "
Syrup of marsh mallow	8 "

A child's spoonful to be given every hour.

In most cases the vomiting ceased after the first few doses, and the intense odor of the stools was mitigated as soon as they became black in appearance, denoting that the drug was doing its work in the intestine. From profuse diarrhœa, the intestinal evacuations were reduced to two or three in twenty-four hours. No milk was given. In the majority of cases the disease was at an end in the course of a few days. The writer thinks it advisable to continue the use of the remedy for some days after the diarrhœa has ceased. Dr. Dörffler has used the remedy successfully in acute diarrhœas in adults also. In the diarrhœa of typhoid fever it has been found beneficial, and in that of intestinal tuberculosis superior to all others.

Dr. C. Söhle has employed this formula:

Soluble bismuth phosphate	30 grains;
Mucilage of gum arabic	2 fl. oz.;
Distilled water	1 oz.;
Tincture of opium	2 to 3 drops.

Of this a teaspoonful is to be given every two hours.

The Results of Hysterectomy for Cancer.—Dr. Mangiagalli, of Milan (*Atti della Società italiana di ostetricia e ginecologia*, 1895; *Centralblatt für Gynäkologie*, Feb. 1, 1896), generalizes as follows from his own large experience and from records of cases published by others: The mortality is greater after operations for carcinoma of the body of the uterus than after those for diseases of the cervix, and in cases of carcinoma of the cervix the prognosis is the more favorable the less the disease is found to have advanced to the vagina and into the parametria. The prognostic influence of the method of operating is less evident. Seventeen of the author's own patients had remained free from relapse for two years.

The Influence of Institutes for Consumptives on the Health of the Neighborhood.—As a contribution to the discussion of the question as to whether or not institutions for the treatment of pulmonary consumption tend to spread the disease, Dr. Nahm, of Falkenstein (*Münchener medicinische*

Wochenschrift, 1895, No. 40; *Centralblatt für innere Medicin*, Feb. 1, 1896), puts forward the statement that during a period of twenty years preceding the establishment of the Falkenstein sanitarium an average of four per cent. of the inhabitants died annually of consumption, and 18·9 per cent. of the total mortality was attributed to that disease, but that after the institution was opened, during the period from 1877 to 1894, the average annual mortality from phthisis fell to 2·4 per cent., and the proportion of deaths from consumption to those from all causes sank to 11·9 per cent.

The Antipyretic Action of Sparteine.—In the *Lyon médical* for January 19th, in an article on this subject, M. Lannois remarks that it is known that M. Geley attributed to the cutaneous applications of sparteine many therapeutical properties, the most prominent of which is the regulation of thermogenesis. M. Boitel, says the author, after examining many thermometric charts under his direction, reached altogether different conclusions from those of M. Geley. In M. Boitel's experiments sparteine, with but one exception, was the only drug used, and, according to M. Geley, it seemed to have the most energetic action. The investigations were pursued exclusively in a special class of patients, the tuberculous, for in them all other treatment may be suspended for several days without the risk of aggravating their condition.

M. Lannois cites several cases in which the applications of sparteine were employed in strict accordance with M. Geley's directions as to the conditions under which the sparteine should be used, one of which is that the painting should be done at a time when the temperature is not rising, and he mentions six o'clock in the evening as the most favorable hour. It was precisely this condition, which, says the author, M. Geley considered so important, that had enabled him to reach an entirely different interpretation of the results obtained. It will be recalled, he says, that M. Geley specified that these applications had no lasting therapeutic effect in visceral affections. With regard to the immediate antithermic results, M. Geley divided all the cases into three classes: Those in which the temperature remained stationary; those in which it continued to rise; and those it which it fell after the application of the sparteine. It is with the latter condition that M. Lannois especially deals, as there was no fall in temperature in the former conditions.

If, says M. Lannois, the temperature of tuberculous persons (which class of patients M. Geley had given much attention to) is taken regularly every hour or every three hours, it will be seen that in them the maximum of the temperature is reached at six o'clock in the evening, sometimes even before, and that the thermometric curve begins to fall at this moment; at eight or nine o'clock the lowering is very perceptible, and at midnight it is very marked. If the temperature is observed only on the days when the sparteine is applied, what may be supposed to be a therapeutic fall in temperature is in reality only a normal and regular symptom. In order to be convinced, says the author, that it was by this mistaken interpretation that M. Geley obtained his results, it is sufficient to glance over the charts in M. Boitel's thesis. Here the applications were made under the required conditions at six o'clock in the evening. M. Lannois thinks it is impossible to find any modification in these curves, whether they are considered together, or whether a comparison is made from day to day, of the cases in which the sparteine was applied, with those in which it was not applied.

The author does not discuss M. Geley's observations with regard to acute affections, such as measles and scarlatina, as he has had no personal experience in this direction, but he thinks they are open to criticism, and it seems to him that nothing remains to be said of the antithermic and therapeutic action of sparteine.

The same journal publishes a report of a meeting of the *Société des sciences médicales* at which M. Guinard alluded to M. Lannois's results and criticisms, which latter he thought were greatly exaggerated, although, he said, they were not the less interesting on that account, as they drew attention again to a method very little known, and they would, in the end, come to nothing in the light of future researches, which would result in establishing the truth on a solid basis. M. Guinard gave a detailed account of the results that had led M. Geley to attribute such influence to applications of sparteine; he reviewed both sides of the question, and emphatically declared his belief in the favorable and truly remarkable clinical results obtained by M. Geley with cutaneous applications of sparteine.

Urotropine, or hexamethylenetetramine, says Dr. J. A. Flexner (*Am. Practitioner and News*, Dec. 28, 1895), is non-poisonous even in considerable quantities, is unirritating, is very soluble in water, and is as good a uric-acid solvent as formic aldehyde itself. The name urotropine was given to it on account of the changes which its administration brought about in the urine. Alkaline and putrid urines containing mucus in excess, pus and pus organisms, uric acid, or amorphous urates, were rapidly restored by it to a normal appearance and an acid reaction. The urine was sterilized and increased in quantity, and calculi and deposits were dissolved. The author concludes that urotropine is a most valuable resource in suppurations of the urinary tract and in gouty and rheumatic conditions where an active eliminant of uric acid and its salts is indicated. A further valuable property of urotropine, he thinks, is its faculty of combining readily with salicylic acid and forming a soluble combination. A solution containing from ten to fifteen grains each of urotropine and salicylic acid to the fluidounce of water or other suitable vehicle has the further advantage over the salicylates alone that its taste is not disagreeable. It appears, he adds, to be far less irritant to the gastric mucous membrane than solutions of salicylic acid usually are, and the combination promises to have a wide range of therapeutic usefulness.

The Treatment of Hyperidrosis.—At a recent meeting of the Dermatological Union in Berlin (*Monatshefte für praktische Dermatologie*, Feb. 1, 1896) Herr Frank said that an alcoholic solution of formalin, of the strength of from ten to twenty per cent., would speedily check excessive sweating. Tannoform, he added, was a mixture of formalin and tannin that had lately been put upon the market by Merck, of Darmstadt. This powder, dusted on the affected part, acted very favorably in cases of hyperidrosis or bromidrosis. He had used it in about fifty cases with strikingly good results, especially in cases of offensive perspiration of the feet.

Ichthyol and Thiol.—At a recent meeting of the Dermatological Union in Berlin (*Deutsche Medizinal-Zeitung*, Jan. 30, 1896) Herr Rosenthal, speaking in a discussion on thiol, said that he had had less experience with that product than with ichthyol, but that thiol was only a synthetical ichthyol. He did not believe that, when given internally, it would cause contraction of the blood-vessels, yet perhaps it might have a general tonic effect. He had seen good results from the external application of ichthyol in rheumatic affections, especially articular swellings. He no longer used it in erysipelas, because it rendered it difficult to observe the course of the inflammation. He had seen benefit from the local application

of ichthyol in itching of the anus, in itching of the vulva, and in leucoplakia.

The New York Academy of Medicine.—At the last stated meeting, on Thursday evening, the 20th inst., the recent progress of treatment in affections of the upper respiratory tract was considered in the following papers: The Nose and Accessory Sinuses, by Dr. F. H. Bosworth (discussed by Dr. Asch and Dr. Myles); The Pharynx: Nasopharynx—Oropharynx—Laryngopharynx, by Dr. J. E. Newcomb (discussed by Dr. Gleitsmann and Dr. Brown); and The Larynx and the Trachea, by Dr. D. B. Delavan (discussed by Dr. Abbe and Dr. Chappell). There was a special exhibition of the latest approved instruments for the treatment of these affections.

At the next meeting of the Section in Obstetrics and Gynæcology, on Thursday evening, the 27th inst., the following papers will be read: The Indications for Alexander's Operation, by Dr. Paul F. Mundé; the Indications for Hysterorrhaphy, by Dr. George Edebohls; and The Indications for Vaginal Fixation, by Dr. Hiram N. Vineberg.

The Influence of Sea Air on Affections of the Nose, the Throat, and the Ears.—The November-December number of the *Archives internationales de laryngologie, de rhinologie et d'otologie* publishes an article on this subject in which the writer, M. Lavrand, of Lille, gives the results of his experience in this direction.

Persons, he says, who suffer with chronic nasal affections, such as hypertrophy of the mucous membrane of the turbinals, acute and frequent attacks of coryza, ozæna, and suppuration of the sinuses, may be benefited by remaining at the seaside for a certain length of time. The mental rest, the open air, the sun, and the frequent exercise modify the progress of these diseases by their effects on the general health. General bathing is beneficial; but salt-water douches or sprays are of moderate value only in these affections, with the exception, however, of ozæna, in which affection this treatment has several times given good results. On the whole, says M. Lavrand, all nasal affections that are not acute may be favorably influenced by sea air. By very excitable persons and by those in whom the pituitary membrane is particularly sensitive the exhilarating and exciting effects of sea air are not well borne.

With regard to throat diseases, hypertrophy of the tonsils frequently appears in lymphatic subjects, and such persons are benefited by the sea air, which exercises a favorable influence on the organism and increases its vitality, in this way causing the reduction of the tonsils. If the hypertrophy is of long standing, however, the local condition will not be benefited, although the general health may be favorably influenced.

Nasopharyngeal, pharyngeal, and laryngeal catarrhs, says the author, may be divided into three classes: 1. Those which are provoked and aggravated by sharp air. In such cases the sea air is contraindicated, unless the patient gradually becomes accustomed to it. 2. Catarrhal atony induced by defective vital energy of the mucous membranes. In this class of affections sea air certainly exercises an ameliorating influence. 3. Catarrhs resulting from vocal or general overtaxing. Of persons thus affected, those who are nervous, arthritic, or predisposed to congestion should avoid the seaside; the others are marvelously benefited by the air, the sun, the bathing, and the exercise, provided the latter are taken gradually and in moderation. Acute affections of the throat are distinct contraindications.

With regard to diseases of the ears, says M. Lavrand, acute diseases are also a contraindication to this mode of treatment, and chronic affections of the ear are not usually influenced favorably by sea air; generally it aggravates the trouble. Diseases that are engendered or aggravated by a bad general condition, on which sea air exerts beneficial results, may be excepted.

M. Lavrand's conclusions are that a residence at the seaside for a certain length of time may be beneficial in the chronic affections of the nose, the throat, and the ear. The following exceptions, however, may be made: 1. If there is constant or intermittent suppuration of the ears. 2. If there is sclerotic otitis with buzzing of the ears. 3. Diseases of the pharynx and of the larynx in persons subject to congestion, in excitable tuberculous persons, and in arthritics who are predisposed to congestion or to acute or subacute attacks of inflammation of the mucous membranes.

The German Congress of Internal Medicine.—The fourteenth *Congress für innere Medicin* will be held in Wiesbaden on the 8th, 9th, 10th, and 11th of April, under the presidency of Dr. Bäumler, of Freiburg. The following subjects will be considered on the first day: The Value of Antiseptic Drugs (to be reported on by Dr. Binz, of Bonn, and Dr. Kast, of Breslau). On the third day: The Therapeutical Employment of Preparations of the Thyreoid Gland (to be reported on by Dr. Bruns, of Tübingen, and Dr. Ewald, of Berlin). The following papers have been promised: On Rheumatoid Diseases, by Dr. Gerhardt, of Berlin; On Nucleins, by Dr. Kossel, of Marburg; On the Influence of the Karlsbad Waters on the Function of the Stomach, by Dr. Edgar Gans, of Karlsbad; Clinical Questions concerning the Circulation, by Dr. Benedict, of Vienna; On Muscular Atrophy after Peripheral Lesions, by Dr. Eulenburg, of Berlin; Personal Observations on Chronic Continuous Flux of the Gastric Juice, by Dr. Einhorn, of New York; An Outline of the Treatment of the Uric-acid Diathesis, by Dr. Georg Rosenfeld, of Breslau; On a Little-known Infectious Disease, by Dr. O. Israël, of Berlin; The Pathogenesis of Gout, with a demonstration of microscopical preparations, by Dr. Mordhorst, of Wiesbaden; On the Cheyne-Stokes Respiration and other Changes of the Rhythm of the Respiration, by Dr. Stern, of Breslau. In addition, papers on subjects not yet stated have been promised by Dr. Quincke, of Kiel, Dr. Angerer, of Munich, Dr. Löffler, of Greifswald, Dr. von Noorden, of Frankfort-on-the-Main, Dr. Emil Pfeiffer, of Wiesbaden, and Dr. Weintraud, of Breslau. In connection with the congress there will be an exhibition of new apparatus, instruments, preparations, etc. Communications may be sent to the permanent secretary, Dr. Emil Pfeiffer, of Wiesbaden.

A Preventive of Insects' Bites.—The *Gazette hebdomadaire de médecine et de chirurgie* gives this formula:

Acetic ether		5 parts;
Eucalyptol, Cologne water,	each	10 "
Tincture of pyrethrum		50 "

This is to be diluted with four or five times its bulk of water and applied as a lotion.

Guaiacol in Tuberculosis.—In Dr. A. Jacobi's new work on the *Therapeutics of Infancy and Childhood* he says: "No one treatment of all forms of tuberculosis ever satisfied me to the same degree as has that of guaiacol. If the taste be objectionable, the carbonate of guaiacol, an almost tasteless powder, may be substituted in three or four daily doses of one to three or four grains each. Both of these preparations, particularly the latter (guaiacol carbonate), may be combined with other drugs according to indications."

A RÖNTGEN PICTURE OF A HAND.

Original Communications.

ON THE QUESTION OF NON-INTERFERENCE IN ABSCESS OF CHRONIC TUBERCULOUS DISEASE OF THE JOINTS.*

A Critical Analysis of Thirty-five Cases occurring in the Service of the New York Orthopædic Hospital.

BY NEWTON M. SHAFFER, M. D.

THERE is probably no subject which has come before the Orthopædic Section of this academy, or the American Orthopædic Association, which has occasioned more discussion or a wider difference of opinion than that which involves the treatment of tuberculous abscess of chronic joint disease. In both of these bodies the matter has been widely discussed, and many statements have been made regarding the treatment of abscesses; but there have been no actual statistics presented of the results obtained. On one occasion—the fifth annual reunion of the American Orthopædic Association, held in Washington, D. C., in connection with the Congress of American Physicians and Surgeons, in September, 1891—I ventured to read a paper On the Benign Course of Abscess in Pott's Disease under Efficient Mechanical Treatment.† The discussion which followed was interesting and instructive. But the writer found himself, as he has on some other occasions, confronted by a somewhat impulsive and dogmatic expression of opinion. As usual, there was on either side scarcely more than a mere expression of opinion—there were no statistics. It was under these circumstances that the writer promised that he would treat all the patients with tuberculous abscess in the New York Orthopædic Hospital upon the plan of non-interference, using only efficient mechanical treatment and constitutional remedies, and that he would make a formal statistical report of the results; the question being, Which is the better way to treat the ordinary cold abscesses of tubercular joint disease: shall they be freely incised with the usual aseptic precautions, or shall they, under ordinary circumstances, be allowed to follow their own course practically unmolested?

I suppose to many minds this question seems absurd—so strongly is the operative side of the question intrenched in the minds of the general surgeon. But a long experience has brought with it to the writer certain conclusions which differ from the conventional practice of the day, and it is with the hope of throwing some light upon the subject that I stand here to-night to redeem the promise made to my colleagues of the American Orthopædic Association over four years ago.

In order to place the matter fairly before my hearers it seems only right that I should make some extracts from the essay above referred to—that essay being, so to speak, my text for this evening.

After some preliminary remarks, I say:

"I feel that surgeons generally stand as a unit on the subject of the surgical treatment of *acute* abscess; and if the *chronic* abscess in tubercular disease resembled the *acute* abscess in its more important particulars, we should not hear the animated discussion that always follows the introduction of the question of the treatment of abscesses arising from tubercular joint disease. And I think it is correct to assume that we are all too apt to regard 'abscess' in its generic sense rather than in its pathological sense; that we are too apt to regard a fluctuating tumor, containing the products of a chronic, infectious disease, as a something to be got rid of at almost any cost, ignoring the fact that the contents of a tubercular abscess differ in many important respects from the contents of an abscess due to acute, non-tubercular lesion. How many of us would hesitate about the propriety of opening a well-marked acute perityphlitic abscess? How many of us would deliberately open a chronic intrapelvic abscess due to a chronic and progressive tubercular disease of the dorso lumbar spine? The extremists who would open every tubercular abscess connected with an actively diseased spine or joint are, I think, as much in error as those who ignore the indications which point to surgical interference.

"My results—after I adopted the plan of opening every chronic abscess—were not so satisfactory as those which followed non-interference. It is true that at that time the antiseptic method of Lister was not available, and the tubercular bacillus had not been discovered by Koch. After the antiseptic method was introduced I followed it very closely, but still I found my results in chronic abscess of joint disease were not satisfactory. It seemed to me that in opening a tubercular abscess from Pott's disease, for example, we were treating a 'symptom' rather than the disease; that we were tapping a reservoir and paying but little attention to its source; and that we were in too much haste to give exit to the so-called 'pus,' which kept on flowing from the source, notwithstanding our external antiseptic dressings. It seemed that high temperature would frequently develop, notwithstanding the gauze and protective and irrigation and drainage, and that repair, as a rule, was delayed rather than promoted by our efforts to find a short route to recovery.

"After an experience among many cases and many methods, I came gradually to adopt a course which appeared to me to have a rational foundation. I attempted to insure as perfect a mechanical protection as possible to the diseased joint or spine, and to maintain the general health in every available way, hoping that the actual disease might cease before the abscess opened (and this proved to be the case on many occasions), or to await the occurrence of either severe local or important general symptoms, due to the abscess itself, before I resorted to incision, etc. After I adopted this plan, I found to my surprise that many abscesses entirely disappeared; that

* Read before the New York Academy of Medicine, October 17, 1895.

† *Vide New York Medical Journal*, February 20, 1892, and *Transactions of the American Orthopædic Association*, vol. iv, p. 178.

some became quiescent or encysted; that few, if any, gave rise to trouble; that those which opened spontaneously almost uniformly did well; and that my results were more satisfactory and more permanent."

"Among the cases I could submit to illustrate this position I cite the following:

"Master S. W., aged eight years, consulted me on March 4, 1887, bringing a letter of introduction from Dr. Weir Mitchell. The patient had Pott's disease of the spine, involving the eleventh and twelfth dorsal vertebræ. There was a slight kyphosis which had evidently been progressing for over a year, but which had been unnoticed until it was discovered by Dr. Mitchell. The patient was pale and thin and in a generally bad condition, but gave a good hereditary history. The prominent feature of his case was the presence of three large abscesses, one in the pelvic cavity, another in the gluteal region, and a third on the inner aspect of the thigh—all on the right side. Fluctuation could be detected between the femoral and pelvic abscesses. The gluteal abscess seemed not to be connected with the others. Both the gluteal and femoral abscesses were very large, the former being especially prominent, while the latter increased the circumference of the thigh three inches over the measurement of the thigh of the unaffected side. The pelvic abscess extended nearly to the free border of the ribs. The patient had only a slight rise of temperature, the daily evening temperature averaging 99·6°, the morning temperature averaging 98·2°, for a period of over a month during which the record was kept. The analysis of the urine showed nothing abnormal, and all the vital organs were in good condition.

"An antero-posterior support (a modified Taylor's) was carefully adjusted, though at first it seemed a difficult thing to do on account of the gluteal abscess, which was so large and extended so high up that it interfered with the hip band of the apparatus. Special provision being made for this, the apparatus was adjusted and the patient was closely watched. He went to his home in May after ten weeks of careful treatment, during which there was a very perceptible decrease in the size of all the abscesses, and in July, 1889, they had wholly disappeared. Careful attention was paid during treatment to the general health and to the climatic surroundings of the patient. He did not spend one day in bed on account of his spinal disease during the entire treatment. I saw the patient during the present summer (1891), and he is well and strong and as active as many boys of his age. As he was so active, I advised that a very light apparatus be worn as a matter of precaution simply, though I have not regarded the patient as being under treatment since May, 1890. The curvature has not increased.

"On November 5, 1890, Miss J. B., of Brooklyn, aged ten years, consulted me, bringing a letter of introduction from Dr. Samuel T. Hubbard. The patient had Pott's disease of the first and second lumbar vertebræ, with abscesses very much like those existing in the case just related—viz., large intrapelvic, gluteal, and femoral abscesses, the two last named being especially large and prominent. The patient did not have any rise of temperature above the normal. The antero-posterior spinal apparatus was applied, and the patient was brought to me from Brooklyn every week. Constitutional remedies were used, and the patient was instructed to go out of doors every pleasant day. At the end of two months there was a perceptible decrease in the size of all the abscesses, and at this date (September, 1891) fluctuation can not be detected at any point, and the patient is in remarkably good health. The apparatus is still worn, and the patient is still under professional observation. The kyphosis has not increased."

Both these patients have completely recovered without any increase of deformity. The first named, the boy, is at boarding school, playing football; the second, the girl, is well and going to school, exercising in all respects like her playmates.

I have operated on several patients in similar conditions, and I have seen other surgeons operate in abscesses of this class. The results have been unfortunate. In almost every instance a prolonged chronic septicæmia has followed, with death as the result in the majority of cases, and this is particularly true of adults and adolescents.

On the other hand, under the plan of non-interference, with efficient mechanical treatment, I have seen many happy recoveries, of which the two patients reported above are only examples, and in the adult and adolescent a favorable prognosis may frequently be given, where incision and drainage would at least be followed by uncertain results. But the *sine qua non* is efficient and prolonged mechanical protection. Unless this can be carried out with almost the same care the surgeon gives to his aseptic dressings the result will be doubtful.

Indeed, the value of mechanical treatment can not be overestimated. It is absolutely essential to success. It does not answer to simply apply a support and then leave the patient to the care of the instrument-maker. The surgeon must feel the same responsibility regarding the attention to details that he does in treating a fracture or in following up the dressings after a major operation. He must know that the mechanical treatment is doing the work required of it and that real support is being secured.

The method also is important. For example, recumbency in Pott's disease, except as a temporary expedient, is a fallacy; so is the weight and pulley in hip-joint disease. The various portable frames and beds, the leather and felt jackets do not afford proper protection to the diseased conditions under consideration. The fundamental principle of mechanical treatment in chronic tuberculous joint disease is: *Protection to the diseased part, with the maintenance of functional activity of the other parts of the body.* The plaster-of-Paris jacket is not adapted to the treatment of Pott's disease, and I should no more think of applying it to the treatment of this condition than I should of opening an abscess without aseptic precautions. Long ago, in 1878, in my brochure on Pott's disease, I called attention to the fact that the gypsum splint was useless in chronic spondylitis above the eighth dorsal vertebra. When the disease is below that point we have a far more accurate means of support than the plaster-of-Paris jacket, and a well-adjusted ball-and-socket chin piece is so far superior to the "jury mast" as a support above the eighth dorsal vertebra that the latter should be relegated to the eighteenth-century practice where it belongs.

With an accurately fitting antero-posterior steel support, based upon the Taylor principle, supplemented when practicable by a properly applied belt, making pressure upon and limiting motion at the diseased part of the spine, we

have as nearly as may be an ideal protection for the diseased spine.

Why should we limit superior thoracic respiration in dorso lumbar Pott's disease, or why should we interfere with abdominal respiration in cervico-dorsal disease? The ideal apparatus should support the diseased portion of the spinal column and allow, so far as practicable, functional activity at the non-diseased portion. This certainly can not be accomplished by any encasing jacket which attempts, though it does not succeed, satisfactorily splinting any part of the spinal column.

What is abscess? Technically speaking, it is "a collection of pus formed as the result of suppuration." * For the purpose of this paper we must call a collection of tuberculous material an abscess, though it frequently does not contain any pus at all. If the abscess of tuberculous joint disease was the result of a pyogenic process this paper would probably not have been written, and there probably would be no important difference of opinion regarding the question of the treatment of abscesses among surgeons. But the cold abscess of tuberculous disease presents, both clinically and pathologically, an entirely different aspect from "a collection of pus, the result of suppuration." Clinically it presents a simple fluctuating tumor. There is no apparent heat, and the general temperature is normal, or nearly so. Pathologically it is not a pyogenic abscess. It contains the product of a distinct condition having the bacillus of tuberculosis as its cause. Ogston, Cheyne, Collins Warren, Senn, and latterly Dr. John Dane, of the Children's Hospital in Boston, as well as others, have proved that these abscesses are sometimes absolutely sterile. Why then should we be in a hurry to incise the abscess and permit the entrance of micro-organisms?

Ordinarily the tuberculous abscess pursues a benign course. Frequently we are obliged to search for it, especially in dorso-lumbar Pott's disease. The patient may be wholly unaware of its existence. It gives rise to no inconvenience. It is simply a sign of disease, the location of which is remote from the indolent and ofttimes painless expression of it.

So long as we know of the existence of an abscess in chronic joint disease by our sight or by palpation only, we are perfectly justified in letting it alone. There are no indications for active interference. As has been mentioned, it may be sterile. Then, again, it may be absorbed, or we may cure the *cause* of the abscess before the latter becomes at all pronounced, in which case the abscess becomes a local affair and has no special significance.

But even under the most favorable circumstances the abscess may assume a different phase. The simple tuberculous material may undergo a change and a pyogenic element is added. The so-called "mixed infection" then occurs. Under these circumstances we may find a slight daily rise of temperature, showing a minor degree of septicæmia, and sooner or later the abscess may increase in size and the process of burrowing may begin.

It is in conditions of this kind that the judgment, experience, and patience of the surgeon will be tested. The temptation is to use the knife at once. My advice is, Do not be in a hurry to do so. Wait for a while. The septicæmic flurry may and probably will soon pass over—if you protect the articulation. And if the infection proves to be a slight one, the general condition remaining good, with approximately good appetite, sleep, and digestion—wait. Get your patient up—in his apparatus. Let the healthy parts of the body move in the air and sunshine. Even if the temperature goes to 101° or even 102°, do not be worried. In children this is not a serious menace. And if you watch and wait, and maintain the joint protection, you will probably find that the condition will gradually subside.

But if, as sometimes happens, the infection is very severe and the symptoms become urgent, there is no question as to the course to be pursued. Make a free incision and use ample and perfect aseptic means to protect the abscess. But if you can maintain a secure protection to the diseased articulation it is better by all means, if the infection is slight, to let the abscess alone. And if it must open, let it open itself.

A temperature of 101° to 102° or more in chronic tuberculous disease tells a far different story from the same temperature in acute pyogenic abscess. I have stood many times at the bedside of a patient with tuberculous disease and abscess, watching the vital signs with apprehension, but waiting for some decided sign to guide me, and as I have waited Nature has solved the problem by either a spontaneous opening of the abscess or a spontaneous absorption. And the patient has been a gainer by my waiting.

To those who watch and wait the problem is solved. Those who watch and wait will, I think, reach the conclusion that I have reached long ago—viz., that the ultimate recovery of the patient with a useful joint is better under the plan of non-interference than it is under that procedure which makes no practical distinction between a tuberculous abscess and a pyogenic abscess, but opens either indiscriminately.

One hears a good deal about the burrowing of abscesses, of the "maceration" of healthy parts by the contained matter, etc. But I have learned, under ordinary circumstances in chronic tuberculous abscess, to have no fear of burrowing, and Nature so far encapsulates a chronic abscess that "maceration" exists largely in the imagination of those who fear it. Surely, in the cases I have reported to the American Orthopædic Association there was ample chance for "maceration" after the extensive "burrowing" that existed. In one case (S. W.) the abscess extended from the diaphragm to the lower third of the thigh, and involved the gluteal region as well. Nearly the same condition existed in the other one (J. B.). But, under efficient treatment, both abscesses were absorbed, and there is not a trace of their existence to-day. So it is in many other instances. The slow burrowing of a chronic abscess need not be feared. The burrowing of an acute pyogenic process demands immediate attention.

Looking at the question in the abstract, we may ask, Do asepsis, incision, drainage, irrigation, etc., meet the indications in our present state of knowledge? Does the

* Foster's *Encyclopædic Medical Dictionary.*

knife, in making an external wound which communicates with the diseased joint, favor the ultimate cure of the disease? How often can we be sure, short of a radical excision of the joint (and this is impracticable at the hip and the spine), that we can remove the tuberculous material? Logically speaking, one should go on and excise the joint if one opens a tubercular abscess connected with it; for unless all the tubercular material is removed there is increased danger with a freshly incised wound, and it is impossible to insure perfect sterilization of an open sinus for a prolonged period of time.

These are questions which I have been studying for years. Through all the phases of Listerism, through all the aspects of a moderately active operative work, through the dreary field of non-interference, I have plodded in my desire to seek the truth. I bring these questions before this audience to-night and ask them to aid in the solution of a most important problem.

As a contribution to the subject I submit the results of four years of patient work in the Orthopædic Hospital. I have no other statistics with which to compare them; but I sincerely hope that some of my colleagues who hold different views will give their side of the question in an equally practical form, so that we may see both sides of the question.

From the first day of May, 1892, to the present date, sixty-three patients with hip disease, eighteen patients with Pott's disease, and twelve patients with knee-joint disease (ninety-three in all) have been treated in the New York Orthopædic Hospital.

During this period Dr. P. H. Fitzhugh and Dr. R. A. Hibbs have respectively filled the position of house surgeon, the former serving to the 1st of January, 1894, the latter being the present incumbent. Their careful work in watching the patients under their care and their thoroughness in keeping the histories, etc., deserve my warmest commendation.

Of these ninety three patients with joint disease thirty-five have had abscesses. Nineteen of them occurred in the service of Dr. Fitzhugh and sixteen in the service of Dr. Hibbs.

Only thirteen of Dr. Fitzhugh's cases and the same number of Dr. Hibbs's cases come accurately within the scope of this report, which is to demonstrate that, in the great majority of instances, tuberculous abscess in chronic joint disease pursues a benign course under efficient mechanical protection, and that most excellent results are obtained under the plan of non-interference with the abscess. Hence, it would be fair to report those cases only which have been watched from beginning to ending, and where the treatment has been carefully and continuously carried out. The last six of Dr. Fitzhugh's cases are not by any means representative ones, nor are Cases XXIII, XXXIV, and XXXV of Dr. Hibbs's series; but I feel that it is better to report *all* the abscesses that have occurred in the hospital, so that the hearer may judge for himself and draw his own conclusions.

The treatment pursued in these cases was:

1. Efficient and continuous mechanical protection (*a*) with the long Taylor traction splint in hip-joint disease; (*b*) with the antero-posterior spinal support in Pott's disease; and (*c*) with an immobilizing or traction apparatus in knee-joint disease.

2. By constitutional remedies—cod-liver oil, the hypophosphites, malt, iron, etc.

3. By rest in bed during the treatment of the deformity stage of hip-joint disease and recumbency in the acute phases of Pott's disease. The patients, however, were up and about nearly all the time, the hip deformity yielding easily under ordinary circumstances to the hip-splint traction upon an inclined plane.

4. In all cases the abscess was allowed to open spontaneously, no pressure or force being used, aseptic dressings were applied at once just as if an artificial opening had been made. In most instances the simplest external dressings were used. In a few cases irrigation and drainage were employed. In the majority of instances all that was done was to keep the parts clean externally by the use of peroxide of hydrogen, bichloride-of-mercury solution, carbolic-acid solution, europhene, etc. All temperatures were taken at the rectum. No iodoform was used.

The following are the condensed histories, photographs of the result being presented in all available cases.

Dr. Fitzhugh's cases are as follows:

Case I.—Tommy L., aged four years; dorso-lumbar Pott's disease; large abscess, involving pelvic cavity and thigh; duration of disease before abscess appeared, eight months; abscess opened spontaneously one month after its recognition; closed four months later. Treatment: Poultice before abscess opened; after, simple external dressings; no irrigation, no washing out. There was no constitutional disturbance and no increase in deformity. Patient discharged cured.

Fig. 1.—Case I.

Case II.—George R., aged twelve years; hip disease; ilio-femoral abscess primarily, afterward involving outer aspect of thigh; abscess very large; duration of disease before abscess appeared, five months; abscess had entirely disappeared one year later; no constitutional disturbance; no local treatment; no subsequent recurrence of the disease; recovery complete with half an inch shortening; joint motions almost normal; has been working in a store over two years.

Case III.—Ella G., aged six years; double hip-joint disease; abscess large, ilio-femoral, on left side; no abscess on right side; right hip has completely recovered.

The disease on left side was not recognized until the abscess appeared; it opened spontaneously three months later; a small sinus still remains, discharging a few drops daily; no pain. Temperature during active period of abscess and just after its opening, 99° to 101°; simple external dressings; no irrigation or washing out; general condition excellent; left leg a quarter of an inch shorter than right.

Case IV.—Lewis L., aged two years and a quarter; abscess after excision of hip joint; excision performed in Scranton, Pa., in March, 1889; the abscess appeared at outer aspect of thigh two years after operation; opened spontaneously a month after it appeared; closed five months later; simple external dressings; no constitutional disturbance; recovery; flail joint (due to the excision); three inches shortening.

Case V.—Minnie G., aged five years; hip-joint disease; had two abscesses—one on the anterior aspect of the thigh; the other, in the gluteal region, was quite large; the thigh abscess occurred thirteen months after the first appearance of the disease; the gluteal abscess two years and four months after first appearance of disease. Thigh abscess opened spontaneously nine months after it was first noticed; the gluteal, one month; thigh abscess closed in eight months; gluteal in four months. Treatment, simple external dressings. Temperature after gluteal abscess opened for two weeks, 99° to 104°; since then, normal. Present condition: Extension of thigh to a hundred and seventy-five degrees, with ten degrees of motion; no lateral deformity; abscesses have remained closed; shortening, a quarter of an inch.

Case VI.—Nettie D., aged two years; hip disease; gluteal abscess of about the size of an orange; duration of disease before abscess appeared, three years and one month; abscess has entirely absorbed after existing for one year; general condition most excellent. Present condition: Extension to a hundred and seventy-five degrees; about ten degrees of motion; slight adduction; one inch shortening.

Case VII.—Eddie P., aged eight years; hip disease; anterior femoral abscess, size of a goose egg; disease existed eighteen months before abscess appeared; opened spontaneously three months later; a small sinus still discharges a drop or two daily. Temperature, 99° to 101° for some months, but there was no interference with appetite, sleep, or exercise. Present condition: Extension to a hundred and sixty degrees; ten to fifteen degrees of motion; very slight abduction; shortening, a quarter of an inch.

Case VIII.—Joseph R., aged eight years; Pott's disease, dorso-lumbar; large psoas abscess, filling one half of pelvic fossa, existed on admission; eighteen months later, abscess had entirely disappeared; no constitutional symptoms; no increase in deformity.

Case IX.—Elizabeth O., aged seven years; abscess after excision of hip joint; small abscess appearing at line of cicatrix; excision performed at a general hospital in this city; abscess appeared in March, 1893, opened spontaneously one month later; closed in three months; simple external dressings; no elevation of temperature; an inch shortening; walks fairly well with telescoping joint, due to the excision.

Case X.—Frank O'N., aged seven years; knee-joint disease; large abscess over internal condyle and involving popliteal region; abscess existed at time of admission; increased very rapidly and opened spontaneously four months later; about six weeks after abscess opened patient left the hospital and went to Buffalo. At that time the sinus was in excellent condition, discharging a few drops only every twenty-four hours; no constitutional disturbance; no irrigation; simple external dressings.*

Case XI.—Alice D., aged two years and a half; hip-joint disease; very large anterior femoral abscess, involving also outer aspect of the thigh; disease existed two years before abscess appeared; fifteen months later abscess has entirely disappeared by absorption without the slightest constitutional symptoms; hip was exquisitely sensitive when patient entered hospital; strongly marked tubercular heredity. Present condition: Extension to a hundred and eighty degrees; flexion to a hundred and forty degrees; no lateral deformity; shortening, half an inch.

Case XII.—George S., aged ten years; hip-joint disease; large gluteo-femoral abscess, which was present when patient entered ward, having been present ten months prior to that date; five months after admission abscess opened spontaneously; had four sinuses, three of which have closed; one is now discharging a few drops daily; nearly healed*; no constitutional disturbance; general health excellent; simple external dressings; shortening, half an inch.

Case XIII.—James S., aged five years; Pott's disease, dorso-lumbar. On admission, iliac abscess, with small sinus discharging. In very bad condition on admission; thigh flexed to ninety degrees; sinus closed two months after admission. Temperature at first, 99° to 102°. This soon disappeared and patient made rapid improvement; simple external dressing; no increase in deformity; patient well.

Fig. 2.—The resulting cicatrices in Case XIII.

Case XIV.—Robert K., aged ten years; Pott's disease, (1) upper dorsal, (2) dorso-lumbar; two distinct foci of disease; large abscess in left iliac fossa; abscess increased in size for a time; general condition very much improved; no constitutional disturbance; no increase in deformity; patient removed by parents after a nine months' residence in hospital in October, 1893; was last seen May 23, 1894. Prior to that date abscess had been aspirated, and it subsequently opened spontaneously in February, 1894. A small sinus was discharging when last seen. Patient was in good condition and going to school.

Case XV.—Yvonne O., aged five years; Pott's disease, dorso-lumbar; large abscess in right iliac fossa; opened spontaneously twelve months after admission; very profuse discharge; irrigation, etc., for several weeks, during which temperature ranged from 99° to 103°. Afterward simple external dressings were used. After being in the hospital for a year was removed by her mother (July, 1892) to the country, the sinus still discharging; spinal deformity slightly increased. She also had a fluctuating tumor involving the upper third of thigh (left). Patient has not been examined since last March (1892), when it was reported that she was in good condition, able to go about, with several sinuses discharging.

Case XVI.—Nellie C., aged ten years; hip disease; small femoral abscess, which opened spontaneously two months after admission. Irrigation and antiseptic dressings. Temperature before abscess opened, 100° to 101°; after opening, 100° to 104°. A second abscess appeared about a year later on inside of thigh, which opened in a month. Irrigation, etc., for a short time, afterward simple external dressings.

The patient was doing well and improving when she was removed in the summer of 1892 to a general hospital, and

* The patient went under the care of Dr. Bernard Bartow, of Buffalo, who reports to Dr. Fitzhugh that the sinus has closed.

* *January 15, 1896.*—All the sinuses have closed.

after a brief stay she was transferred to another general hospital. She then had five discharging sinuses. She died of pulmonary tuberculosis some time in the winter of 1893.

During her residence in the two general hospitals referred to the patient had little or no protection to the diseased joint. She left the Orthopædic Hospital in a fair condition, walking about on her traction splint. The loss of efficient mechanical treatment was, I believe, an important factor in her subsequent career.

Case XVII.—Morris M., aged thirteen years; Pott's disease, dorso-lumbar. On admission to the hospital in April, 1893, had four discharging sinuses, with marked double psoas contraction. General condition on admission very poor. Improved greatly in general health for a time. Sinuses dressed externally, with occasional irrigation; no marked elevation of temperature. Was discharged from hospital as incurable, after nineteen months, in November, 1894, with ten discharging sinuses. Died in June, 1895, eighteen months later, with waxy liver and general tuberculosis.

Case XVIII.—Mary C., aged ten years; hip disease; admitted to hospital, May, 1893, with small sinus on external aspect of middle third of thigh, which closed one week afterward and has remained closed; no elevation of temperature; simple external dressings; joint can be fully extended, and has about ten degrees of motion; no lateral deformity; general condition excellent; shortening, two inches.

Fig. 3.—The resulting cicatrix in Case XVIII.

Case XIX.—Maggie G., aged four years; Pott's disease, dorso-lumbar. When admitted to the hospital, in June, 1892, was in a deplorable condition. She had pulmonary tuberculosis, and three sinuses were discharging profusely—one just above the kyphos, the second at the inner aspect of the thigh, and the third just below the trochanter major. Temperature, 101° to 104°. The patient had been treated prior to admission in a general hospital for two years with a plaster-of-Paris jacket, the one we removed weighing almost as much as the emaciated patient. The condition was hopeless from the first, and after two months' effort the patient was discharged. She died shortly afterward of phthisis pulmonalis.

The following cases occurred in the service of Dr. R. A. Hibbs:

Case XX.—Arthur K., aged seven years; hip disease; large abscess on outer aspect of the thigh; duration of disease before abscess appeared, five years; abscess opened spontaneously eight months after its appearance; closed three months later; has been closed one year. Treatment, simple external dressings. Temperature, 99° to 100°. Present condition: Extension of thigh to one hundred and eighty degrees; twenty-five degrees of motion; no lateral deformity; general condition excellent.

Fig. 4.—The resulting cicatrix in Case XX.

Case XXI.—Jennie G., aged seven years; Pott's disease, dorso-lumbar; abscess in either iliac fossa; very large on right side; somewhat smaller on left; abscess appeared about five years after the disease was first noticed. The right abscess disappeared by absorption about eighteen months after it was first noticed; the left also disappeared in about one year. Temperature, 98·4° to 100°. General condition excellent; deformity has not increased.

Case XXII.—James E., aged thirteen years; hip-joint disease. Previous to admission patient had some extensive operation, probably exploratory, at antero-lateral aspect of thigh, the cicatrix presenting a sinus on admission which discharged slightly for a short time. Subsequently, about one year later, an abscess appeared in same location. It gradually became quite large, and opened spontaneously one month after it was noticed. In four months it had healed; no constitutional disturbance; simple external dressings; extension of thigh to a hundred and eighty degrees; flexion to ninety degrees; no lateral deformity; shortening, an inch and a half; general condition excellent.

Fig. 5.—The resulting cicatrix in Case XXII.

Case XXIII.—Sophie C., aged four years; hip-joint disease; very large gluteal abscess. Disease existed three years before abscess appeared—opened spontaneously ten months later. While under treatment patient developed knee-joint disease on the same side. The gluteal abscess interfered with the perineal pads of the hip splint, and the weight and pulley were used. It was impossible to apply efficient mechanical treatment; abscess continued to discharge, and one day the mother arbitrarily removed patient from the hospital, after which treatment was refused. Temperature rose to 104° after abscess opened for a short time, after which it became about normal. Shortening, one inch. Patient left hospital with considerable flexion and adduction.

This case is especially interesting as showing how the

abscess itself may interfere with efficient mechanical treatment.

Case XXIV.—Elmer G., aged eight years and a half; hip-joint disease; anterior femoral abscess of an average size. Abscess was present when patient entered ward. It opened spontaneously soon after we first saw it; closed in twenty-one months. Temperature immediately after opening, 103° to 104°; for a few days after that, 100° to 101°; simple dressings only; abscess reopened seven months after it closed; slight discharge for three months, giving no inconvenience. Present condition: Extension of thigh to a hundred and seventy degrees, twenty degrees of flexion; no lateral deformity; general condition excellent throughout; one inch shortening.

Fig. 6.—The resulting cicatrices in Case XXIV.

Case XXV.—Mary Z., aged thirteen years; hip disease; extensive abscess on antero-lateral aspect of thigh. Duration of disease before abscess was noticed, seven months; opened spontaneously four months later; entirely closed in eighteen

Fig. 7.—The resulting cicatrices in Case XXV.

months; simple external dressings; temperature, 99° to 100°; patient showed steady improvement while under treatment; is now in excellent condition; thigh extension, a hundred and eighty degrees; twenty degrees of motion; no lateral deformity; shortening, an inch and a quarter.

Case XXVI.—Julia H., aged eight years; hip disease, large abscess on outer aspect of thigh. Disease existed twenty-two months before abscess appeared. Opened spontaneously five months later; closed in six months; temperature, 99° to 100°, with occasional rises to 102°; simple external dressings. General condition kept improving during treatment. Present condition: Extension of thigh to a hundred and eighty degrees; twenty-five degeees of motion. No lateral deformity; shortening, a quarter of an inch.

Case XXVII.—Ada M., aged eleven years; Pott's disease, dorso-lumbar; large ilio-femoral abscess on either side. On the right side abscess extended from diaphragm to middle of thigh, both anteriorly and posteriorly. Aspirated twice without diminution of the pus; a slight discharge appeared at the point of aspiration for a short time. This closed leaving a scar with the abscess as large as ever. The whole mass un-

Fig. 8.—The resulting cicatrix in Case XXVI.

derwent absorption. No evidence of abscess exists to-day. On the left side the abscess was also very large, but did not extend very far below Poupart's ligament. This abscess has disappeared by absorption entirely in about three years. Neither of these abscesses gave the patient any constitutional symptoms. At one time her temperature rose slightly at ir-

Fig. 9.—The resulting cicatrix in Case XXVII.

regular periods, and, as she came from a malarial region in New Jersey, Dr. Andrew H. Smith thought it was due to this cause. She was up and about all the time in her apparatus. No increase in the deformity. Patient in excellent condition.

Case XXVIII.—Martha H., aged five years; hip disease;

Fig. 10.—The resulting cicatrix in Case XXVIII.

large abscess on outer aspect of thigh. Disease existed a year and four months before abscess appeared. Opened

spontaneously four months later. Closed in eleven months. Temperature, 99° to 100°, exceptionally to 101°. Simple external dressings. General condition excellent at all times. Extension of thigh to one hundred and eighty degrees; twenty degrees of motion. No lateral deformity. Shortening, a quarter of an inch.

Case XXIX.—Joe B., aged nine years; hip disease; large abscess on lateral aspect of thigh, which existed when patient entered ward. Opened spontaneously six months later. Closed in ten months. Temperature, 99° to 101°. For four months after opening, irrigation with bichloride of mercury or peroxide of hydrogen was used, but the discharge continuing very profuse, this was stopped. After irrigation was stopped and simple external dressings were used, the temperature fell from half a degree to a degree and a fifth every day, and discharge was much diminished. General condition excellent. Extension of thigh to one hundred and seventy degrees; twenty degrees of motion. No lateral deformity. Shortening, an inch and an eighth.

Case XXX.—Samuel L., aged twelve years; hip disease; very large abscess on anterior aspect of thigh, extending down to three inches above the knee joint. The disease had existed two years and three months before abscess appeared. Abscess opened five months after it was noticed. It is now closed, eleven months after it opened. One or two crusts appear on the long cicatrix. Immediately after the spontaneous opening the temperature rose to 104°, and remained about that point for a few days. For four months the large cavity was irrigated twice daily, but the temperature remaining high, about 102° to 103°, and the discharge continuing profuse, irrigation, etc., was stopped and simple external dressings were employed. The temperature at once dropped from one degree to one degree and a half, and the discharge diminished. Patient is now in good general condition. Extension of thigh to one hundred and seventy degrees; fifteen degrees of motion. Very slight lateral deformity. No shortening. A second abscess (gluteal) has recently developed. It has opened spontaneously during the past few days.

Case XXXI.—Abe L., five years old; hip disease; abscess discharging profusely when patient entered hospital. His general condition was very poor. Under simple external dressings his general condition improved very much, and in a

Fig. 11.—The resulting cicatrices in Case XXXI.

year the sinus had entirely closed. Temperature, 98·4° to 100°, with occasional rises to 102°. Present condition: Extension of thigh to one hundred and seventy-five degrees; motion slight—about five degrees; slight abduction; shortening, half an inch.

Case XXXII.—Lulu R., aged seven years; hip-joint disease; abscess discharging when patient entered hospital. Very slight discharge for a year. Sinus closed. General condition excellent. Temperature, 99° to 100°. Present con-

Fig. 12.—The resulting cicatrix in Case XXXII.

dition: Extension of thigh to one hundred and seventy degrees; ten degrees of motion; slight abduction; an inch shortening.

Case XXXIII.—Samuel K., aged five years; knee-joint disease; small abscess over internal condyle. Disease existed ten months before abscess opened. Abscess opened spontaneously seven months later; still discharging slightly.* A

Fig. 13.—The resulting cicatrix in Case XXXIII (outer side of the knee). The sinus on the inner aspect is closed, but no photograph is obtainable in time for this publication.

second abscess appeared on the opposite side six months ago; opened two months later; closed a few weeks ago. When patient came under treatment the joint was very flail-like. Patient has improved very markedly. Flail-like motion has become much modified. General condition excellent. Temperature, 99° to 100°. Knee joint straight. Motion through eight or ten degrees. No subluxation.

Case XXXIV.—George K., aged twelve years; multiple joint disease. Patient entered hospital in June, 1893, from an almshouse in St. Lawrence County, New York, where he had been for several years. On admission he had disease in both hip joints, left knee, left shoulder, and right elbow. Also extensive necrosis of left tibia. He had in all thirty cicatrices upon admission.

Dr. McBurney, in consultation, advised amputation at left thigh, and the operation was performed by Dr. McBurney at the Roosevelt Hospital. The history is a long one, and to

* Sinus has completely closed, January 1, 1896.

summarize I may say that the disease in the left hip recovered some months after amputation, and he was fitted with an artificial leg. The patient walked well with the hip splint on the right leg and crutches. Disease in right hip recovered. The sinus at the right knee closed. Patient could walk without crutches and with artificial leg. He suddenly developed albuminuria and died of chronic nephritis on September 28, 1895. Post-mortem showed recovery at right hip, with an abscess posterior to that joint, connecting with a diseased bone near the ischiadic notch; other joints were not examined.

Case XXXV.—Annie Z., aged eight years; hip-joint disease and lumbar Pott's disease; disease existed three years before abscess, connected with the lumbar disease, opened; it opened seven months after its appearance and discharged profusely; patient developed a cough, and Dr. Chappell, the attending physician to the hospital, and Dr. Andrew H. Smith, consulting physician, diagnosticated pulmonary tuberculosis; temperature before abscess opened, 99° to 102°; after opening, 100° to 104°; irrigation and injections were used, but the patient failed rapidly and died of phthisis in February, 1895.

Summary.—Of the thirty-five patients (all the abscess cases which have occurred in the hospital for over four years), twenty-six remained under the care of the institution for a sufficient length of time to test the value of the plan of non interference.

Of these twenty-six patients, three had each two distinct abscesses, making twenty-nine abscesses treated in all. In two of the double-abscess cases there were large bilateral ilio-psoas abscesses, and it is worthy of note, especially in connection with the cases of S. W. and J. B., that absorption of the abscesses occurred in all these cases.

Of the twenty-nine abscesses, eight (27·58 per cent.) underwent complete absorption; nineteen (65·51 per cent.), after opening spontaneously, closed under simple external dressings in periods ranging from two to twenty-one months; and in two (6·89 per cent.) there are still small sinuses discharging a few drops daily.

Of the twenty-nine abscesses, 93·09 per cent. have either closed or been absorbed.

Of the remaining nine patients, one was removed by her mother after our efforts, up to the time of removal, had failed to produce an adequate joint protection on account of the location of the abscess. In one instance the abscess was nearly well when the patient entered the wards.

In seven instances the patients either entered the wards with phthisis pulmonalis, or had multiple joint disease, or were removed from the care of the hospital while under active treatment. Of these seven, five died and two have small sinuses which discharge slightly.

In conclusion, I desire to say two things: 1. None of these patients were selected, and none were declined, on account of their condition at the time of their application. 2. I hope that others who hold different views, and especially those who practise incision, etc., will make reports of entire unselected groups of patients with tuberculous abscess of the joints. We shall then have a basis for intelligent comparison.

No. 28 East Thirty-eighth Street.

NITROGLYCERIN IN THE TREATMENT OF SCIATICA.*

By WILLIAM C. KRAUSS, M. D.,
BUFFALO, N. Y.,
PROFESSOR OF NERVOUS DISEASES,
MEDICAL DEPARTMENT OF NIAGARA UNIVERSITY.

Sciatica has been and always will be one of the most intractable of all nerve pains with which physicians have to wrestle, and its alleviation and cure are accomplished, in the majority of cases, only after a prolonged course of mixed and conglomerate treatment. No affection of the nervous system enjoys such a wide range of acquaintanceship among drugs and measures, but none seem to have got on terms of intimacy or favoritism with this fickle disease.

Rest, ice, heat, blisters, hypodermic injections, packs, extension, fixation, electricity, acupuncture, massage, baths, bandaging, stretching, to say nothing of the innumerable medicinal agents, are all equally efficient and inefficient, and whether the pain be due to a neuralgia or neuritis all stand even chances of success. The advent of any new drug not already on the list, if such is possible, creates more suspicion than confidence, and only after it has proved itself worthy can it be recommended to the profession at large.

Such was the state of affairs when nitroglycerin first came to my notice, and now, after an experience of several months, in which time I have treated seven cases, I desire to place myself upon record.

The only reference† that I have been able to find on the drug is in the 1894 number of the *International Medical Annual*, where Charles Lawrence is quoted as recommending its use in cases of obstinate sciatica, beginning with one minim of the one-per-cent. alcoholic solution and increasing up to five minims three times daily. Not being able to find his article in its original form, stating the class of cases in which it was indicated, I used nitroglycerin indiscriminately on all patients with sciatic pain with the following results:

---

* Read at the ninetieth annual meeting of the Medical Society of the State of New York, Albany, January 29, 1896.

† Since I wrote the foregoing the following report has come to my notice, taken from the *Journal of Materia Medica*, February, 1896:

Milkhalkine reports three cases of obstinate sciatica which were greatly benefited by nitroglycerin given in the form of the official solution in one-drop doses three times a day. In one case, a patient, aged forty-four, in whom salicylates, acetanilide, phenacetine, quinine, antipyrine, bromides, chloral, massage, sedative ointments, and blisters failed to give relief, the following combination was entirely successful: Nitroglycerin (one-per-cent. solution), three to thirty minims; tincture of capsicum, ninety minims; peppermint water, three drachms. Three drops three times a day, for three days, and then ten drops three times a day. In another patient, a nervous woman, aged forty-five, with atheromatous arteries and sciatica, associated with atrophy of the muscles and hyperæsthesia, the same combination, in conjunction with bromides, also afforded speedy relief. The third case was a man, aged forty, who suffered with fever and severe pain in the right leg. A blister over the trochanter, with sodium salicylate and valerian, lowered the temperature, but failed to relieve the pain. After the lapse of four days the nitroglycerin treatment was substituted, and this promptly lessened the pain and effected a cure within six weeks, the trouble not having returned after six months.—*University Medical Magazine.*

Case I.—Mr. B., aged fifty-five years, has been a sufferer with rheumatism and sciatica several times, the knee and ankle joints being particularly affected. On Thanksgiving day, 1895, was seized with sciatic pain and tenderness and was obliged to remain in bed without being able to move the left leg ever so slightly. Extreme tenderness and sensitiveness were present over the sacrum, in the space between the trochanter and tuberosity of the ischium, popliteal space, inner surface of the malleolus, and extending to the big toe. Atrophy of the muscles, along with disturbances of sensation, indicated a neuritis of the sciatic nerve rather than a neuralgia.

He was treated heroically with ice applications, rest, liniments, along with the salicylates, iodides, and alkalies, without any relief, and nerve-stretching was suggested but not carried out. I was called to see the patient on December 8, 1895, and prescribed nitroglycerin, one minim of the one-per-cent. solution, or one one-hundredth-grain tablet, three times daily, along with tonics and galvanism. In two days' time the effect of the nitroglycerin was manifested in the arteries, and from this time on he improved, so that in ten days the sensitiveness over the nerve trunk had disappeared entirely. An attack of rheumatism set in a few days later, attacking the knee and ankle joints of the left leg and the knee joint of the right leg, with swelling, redness, and tenderness over these joints. The sciatic nerve became at no subsequent period tender or painful, and to-day he is at his business, relieved of both affections.

Case II.—Mr. B., aged forty-eight years, bookkeeper, has been a sufferer from rheumatism and sciatica for years so that he is hardly able to walk even with his canes. An acute attack of sciatica set in on November 18, 1895, affecting the right leg, necessitating complete rest with immobility of the leg. Tenderness, pain, and sensitiveness were present, and the least movement of the leg was attended with excruciating pain. I prescribed nitroglycerin (one-per-cent. solution), one minim three times daily. Thinking he could not get too much of a good thing, he increased the dose to four and five minims three times daily. No other medicine was administered. In eight days' time he was walking about, entirely freed from all sciatic pain, and in his own words cured from the "hardest attack in the shortest time."

Case III.—Mrs. B., wife of patient No. 2, was seized on December 10, 1895, with an acute attack of sciatica on the left side. I was immediately called for and found present all the symptoms of a severe sciatic neuralgia. Nitroglycerin in one-minim doses three times daily relieved her so that in seven days she was able to be about the house, and in fourteen days all pain and sensitiveness along the nerve had disappeared.

Case IV.—A young lady, aged eighteen years, employed as a typewriter and stenographer, and obliged to sit eight to ten hours on a hard-bottomed chair, complained of acute pain beginning in the small of the back and hips and extending down the legs. On examination I found her anæmic, emaciated, with sensitive areas over the nerve trunks of the legs, some disturbances of sensation, and trophic disorders, symptoms indicating a neuritic affection.

I prescribed cod-liver oil and nitroglycerin with rest, and after a period of four weeks she is again at her work, free from her sciatic pains.

The following three hospital cases are reported by my interne, Dr. Robinson, and are taken from the records of the Erie County Hospital. These cases include *all* the sciaticas which have entered since the nitroglycerin treatment was instituted, and are *not* mere picked cases favorable to this form of treatment:

Case I.—James W., aged fifty-six years; nativity, England; occupation, groom; admitted November 30, 1895.

Family History.—Negative.

Personal History.—Negative.

Present History.—Patient enters hospital complaining of pain in both hips and lower extremities. Examination shows tenderness along the course of both sciatic nerves, most severe on left side.

Patient was put on the use of a bitter tonic and nitroglycerin, one minim three times a day; dose was increased to three minims; he has shown marked improvement. On his entrance into the hospital he was unable to walk, but at the present time he can walk without much pain; there is still some pain on pressure of the left sciatic at its exit from the pelvis.

Case VI.—John K., aged sixty-six years; nativity, Ireland; occupation, laborer.

Family History.—Mother rheumatic; otherwise negative.

Personal.—Patient had right sciatica at the age of thirty. Was discharged from hospital as cured after six weeks' treatment. Had another attack in same leg at the age of fifty-four, which yielded to treatment after six months' time.

Present.—At the age of fifty-nine the right sciatic again became involved, and three years later the left side became affected. Since that time the patient has never been free from pain. He entered hospital, October 22, 1894, with intense pain in both legs, and for which relief could only be obtained by morphine given hypodermically over the sciatics. Bromides and chloral were also given, with no effect in permanently relieving the condition. On December 1, 1895, the patient was given the bitter tonic and nitroglycerin, the dose being increased from one minim to four minims when treatment was begun. Pressure over the line of the sciatic nerves gave patient great pain. At present there is some tenderness, but patient is comfortable and has hopes of recovery, which he had given up before the present treatment was begun.

Case VII.—Charles N., aged forty-three years; nativity, United States; occupation, stone-cutter; admitted December 2, 1895.

Family History.—Father died from consumption. Mother died from Bright's disease; was rheumatic. Two brothers alive who are also rheumatic.

Personal History.—About nine years ago developed pain in groins and back, which has persisted with more or less severity ever since, and which at times prevented him from following his occupation. Patient very susceptible to cold.

Present Illness.—Two weeks before his entrance into the hospital the patient, after exposure during a storm, was attacked with severe pain in left hip and in left lower extremity, being more marked at the joints.

December 2d.—Examination shows lungs and heart normal, except slight accentuation over the aortic valves. Temperature, 100° F.; bowels open; appetite fair; urine showed albumin on first examination, but which after a week in bed disappeared; no casts were found at any time.

Pressure over the sciatic notch on the left side and along the left sciatic nerve gave extreme pain, and which was relieved only by morphine.

Treatment.—Patient was given one minim of spirits of nitroglycerin three times a day, with a bitter tonic of strychnine and cinchona before meals, bowels being kept open, for a week. Later the dose of nitroglycerin was increased to four minims, and, as the patient complained of headache, reduced

to two; on this dose he has been kept for the past three weeks. The tenderness over the nerve has at the present time nearly disappeared. The improvement began to be noticed immediately after the increase of the drug, and which improvement has steadily advanced since that time.

Of these seven patients, all received marked benefit from the very beginning of this mode of treatment. In the acute cases they recovered in from ten days to a month; in the chronic cases they improved notably and gained daily.

Just how to explain the action of this drug on sciatic disturbances is extremely difficult; to say that it has the effect of dilating the arterioles of the nerve sheaths, affording more nourishment to the nerve, might answer in cases of neuralgic sciaticas, but would hardly be accepted for neuritic sciaticas. The action in these latter cases can be explained in no satisfactory way, and therefore had better be left unexplained.

The only discomforts arising from the use of this drug were congestive headaches and flushing of the face sometimes following the first dose of the medicine, while in others they did not supervene until the maximum doses were administered. To counteract these effects the bromides may be used, thus robbing the nitroglycerin of all the physiological effects where they are *not* wanted, and allowing them to proceed without hindrance in those places where they are desired.

I do not wish to convey the idea that nitroglycerin will cure every case of sciatica—far from it; but if it cures fifty per cent. of all cases in a period of from one to three weeks it will be doing what no other drug or measure has heretofore done. If after a period of administration of ten days no perceptible effects have been obtained, it should be abandoned and kept in store for the next case. The treatment of anæmic conditions, diatheses, and local causes, such as pressure—these, perhaps, provoking and setting up the sciatic pain—must, of course, be considered and carried out in conjunction with the special treatment.

From my experience I should advise *beginning* the treating sciatica with nitroglycerin, and only after its inability to cure is apparent falling back upon the other drugs and measures with which we are all acquainted.

THE DISADVANTAGES OF NON-ABSORBABLE SUTURES IN OPERATIONS FOR THE RADICAL CURE OF HERNIA.*

By WILLIAM B. COLEY, M.D.,

ASSISTANT SURGEON TO THE HOSPITAL FOR THE RUPTURED AND CRIPPLED; ATTENDING SURGEON TO THE NEW YORK CANCER HOSPITAL.

In a paper entitled Observations upon the Mechanical and Operative Treatment of Hernia at the Hospital for Ruptured and Crippled, written by Dr. Bull and myself, and published in the *Annals of Surgery* in May, 1893, the statement was made that we should discard all methods in which foreign bodies, even though aseptic, silk and silver wire, for instance, were buried in the wound of a hernia operation. Since that time there has been gradually accumulating such a mass of clinical evidence in support of this view that, if properly presented and clearly understood, I believe to be sufficient to convince every fair-minded surgeon. In a recent paper on the operative treatment of hernia, read before the New York Surgical Society, I endeavored to bring out the objections to non absorbable sutures in hernia operations. These objections were not theoretical, but based upon cases actually observed at the Hospital for the Ruptured and Crippled during the past five years. Four cases were then cited in support of the objections.

To these I have added ten others observed at the Hospital for Ruptured and Crippled during the past year, and the histories of which have been verified from the records of the hospitals at which the original operations had been performed.

Case I.—A man, aged fifty years. Operation, December 20, 1893. Silk was used for buried sutures. There remained an unhealed sinus the following March. Three silk sutures had come out at different times, and on opening up the sinus two more were removed by the surgeon. Relapse occurred four months after operation.

Case II.—A man, aged thirty-nine years. Operation, May 15, 1891. Silkworm gut was used for buried sutures. A sinus followed and was two months in healing, several sutures having come out in the mean time. Relapse in this case occurred in a few months.

Case III.—A man, aged twenty-seven years; reducible inguinal hernia. Modified Macewen operation, silver wire being used for the buried sutures. The patient was seven weeks in the hospital, and two months later there remained an unhealed sinus discharging pus. The sinus had to be opened up and the offending sutures removed before healing took place. Relapse occurred a few months later.

Case IV.—A man, aged forty-four years. Operation, April 20, 1888. Under treatment for sinus until October, 1888. Hernia recurred shortly after. Silk had been used for the buried sutures.

Case V.—J. B., a man, aged thirty-four years; double inguinal hernia. The left side had been operated upon in June, 1894, and again in August, 1894, for recurrence. The right side was operated upon December 3, 1894. On February 19, 1895, examination showed the centre of the right cicatrix still unhealed (two months and a half after operation), and a distinct recurrence on both sides. Silk had been used at all the operations, as proved by the hospital records.

Case VI.—A. K., a man, aged fifty years; right inguinal hernia. Operation, December 20, 1893. Silk was used for the buried sutures. A sinus followed the operation and persisted till March, 1894, when three or four silk sutures were extracted. The sinus was later scraped out and two more sutures removed. The rupture recurred shortly after. A second operation was performed for the recurrence March 8, 1894, at the same hospital by another surgeon. This time silkworm gut was used for the buried sutures.

In June of the same year a second recurrence followed.

Case VII.—A man, aged forty-six years, with left inguinal hernia of two years' duration and had never worn a truss. Operation was performed in October, 1894, and silver wire was used for the buried sutures. He remained seven weeks in bed. Some sutures had to be removed before he was dis

* Read before the Section in General Surgery of the New York Academy of Medicine, November 11, 1895.

charged from the hospital. The patient was first seen by myself on May 7, 1895, seven months after the operation. Examination showed a cicatrix in the left inguinal region three inches long and half an inch wide. At the centre of this cicatrix was a sinus half an inch deep, discharging pus, and evidently leading to a buried wire suture. The hernia had recurred. He was sent to the New York Hospital for operation.

Cases VIII and IX.—I. G., a man, aged fifty-six years; double inguinal hernia of two years' duration. The hernia was of the size of a goose egg on the right side and only a bubonocele on the left. Operation, December 8, 1894. He was three months in the hospital, and there was a sinus on both sides when he left the hospital. These failed to close for six months, and during the entire time he was in much pain and unable to work. When seen on May 17, 1895, five months and a half after the operation, there was a recurrence on the right side the size of a fist. The sinus had healed.

Cases X and XI.—I. R., a man, aged forty years; double inguinal hernia. Bassini's operation on both sides. Buried silk sutures. Persistent sinus on both sides. Double relapse two months later. The patient was operated upon on May 17, 1895, by the Bassini method. He remained in bed seven weeks after the operation.

When first seen, July 13, 1895, examination showed a cicatrix three inches long in each inguinal region. Considerable induration was present on both sides, and in about the centre of both cicatrices there was a deep sinus discharging pus. No impulse was present on coughing. I saw the patient again September 20th, and a recurrent swelling of the size of an egg had taken place on the left side and slightly larger on the right, both undoubtedly due to the weakening of the walls by the constant discharge.

Case XII.—A man, aged forty-five years. The patient had had a hernia one year previous to operation. The operation was performed on January 26, 1895, by Bassini's method, and silkworm gut was used for the buried sutures. The wound healed primarily, but before his leaving the hospital a small sinus appeared from which a slight discharge issued. Shortly afterward another sinus appeared in the line of incision, and these never closed until August 20, 1895, eight months after the operation, when a small incision was made and two silkworm-gut sutures were removed, the larger of which I show you to-night. When I first examined the patient, September 5, 1895, the sinus had healed and there was no hernia. On October 3, 1895, there was a well-marked relapse in the form of a swelling of the size of a small egg in the upper part of the cicatrix.

Case XIII.—A man, aged fifty-two years, with right inguinal hernia. Operation, February 20, 1888. The hernia recurred a few days after his leaving the hospital. A second operation was performed on April 6, 1888. The patient was unable to work on account of a sinus from May 27 to October 24, 1888. The hernia recurred shortly afterward. A third operation was performed February 9, 1892, by Bassini's method. Silkworm-gut sutures were used. Perfect primary union followed. No truss has been worn since operation. On June 4, 1892, irritation about wound became evident and one silkworm-gut suture was removed at the New York Hospital. The patient had no further trouble until July, 1894, two years and a half after operation, when signs of irritation at the site of incision again became manifest.

Under ether an incision was made and a silkworm-gut suture an inch and a half in length was removed. The wound healed well and remained in good condition until October, 1895, three years and eight months after operation. On October 24, 1895, I examined him and found at the site of last incision marked induration, with some redness and considerable tenderness. A third suture was removed two days later by Dr. Weir at the New York Hospital.

Case XIV.—A man, aged twenty-three years, with right inguinal hernia of thirteen years' duration and of the size of an egg. Operation was performed in May, 1890. Primary union followed. Two months later a small abscess appeared in line of the cicatrix. A discharging sinus remained until December, 1890, when a silkworm-gut suture was removed at the New York Hospital. The sinus healed, but the hernia recurred shortly after. Examination, January 8, 1896, showed a hernia of the size of an egg.

Case XV.—A man, aged sixty years, with right inguinal hernia of twenty years' duration and of the size of a cocoanut. Operation was performed in December, 1894, by Phelps's method of the "wire-mattress" suture (twelve feet of wire was used). Examination, November 20, 1895, showed a cicatrix three inches and a half long, with a sinus the size of a lead pencil at its centre and three quarters of an inch deep. A mass of unhealthy granulation tissue was at the site of the sinus, and the discharge was considerable. A wire suture could be felt at the bottom of the sinus, but it was too firmly fixed to be withdrawn. The patient was sent to the New York Hospital, and five inches of silver wire were removed by Dr. Weir. No relapse had as yet occurred in this case, but the patient had been more or less incapacitated for work for nearly a year.

Case XVI.—A man, aged twenty-four years. The hernia had existed but twelve days before operation, and was very small. A double Bassini operation was performed on August 12, 1895. Silk was used for the deep sutures. He remained in the hospital from August 12th to September 15th. The wound had nearly healed when he left the hospital. Examination, December 27, 1895, showed in the middle of the left cicatrix a deep sinus discharging a considerable amount of thick pus. There was no protrusion.*

My personal experience with non-absorbable sutures in hernia operations is confined to three cases in which silk was employed. In one of them, operated by Czerny's method, the wound healed by primary union, but soon after leaving the hospital a sinus formed in the cicatrix and refused to heal until the offending sutures had been extracted. The canal had been so weakened by the slow suppuration that relapse occurred three months after the operation, although a truss was worn the entire time. A second operation was then performed, this time by Bassini's method, with kangaroo tendons for the buried sutures, and the patient is now perfectly sound, three years after operation, without ever having worn a support.

In two cases operated upon by the Bassini method silk was used. In both the wound failed to heal by primary union. In one the sutures all sloughed out, and relapse occurred shortly after leaving the hospital. In the third case moderate suppuration occurred, necessitating keeping the patient in bed after five weeks. The sutures did not come out, and the patient had no recurrence three years after operation.

In two hundred and fifty cases of hernia operations in which I have used kangaroo tendon for buried sutures I have not had a single instance of sinus formation, and

* Cases XV and XVI were observed after the paper was read.

the percentage of primary unions has been ninety-six per cent.

These cases, I believe, require little comment further than the statement that they were operated upon by the leading surgeons of this city, men whose reputation for careful aseptic work is a sufficient guarantee that the results were not due to faulty technique. The non-absorbable sutures, acting as foreign bodies, must alone be held responsible for these results. Schimmelbusch, in his recent book upon *The Aseptic Treatment of Wounds*, page 121, states: "It has more than once been observed that in primary closure of wounds by silk or silver wire the ligature, at the beginning well imbedded in the tissues, after a long period of time becomes repelled and suppurates out. The primary union is satisfactory, but after weeks or months an abscess forms in the line of suture, whereupon a fistula develops, and from the latter the disturbing ligature escapes. Lister introduced six deep hemp sutures into the wound of an extirpated goitre, and after union observed the extrusion of all six in succession in the course of eight or nine months. The imbedded silk or silver wire simply remains as a foreign body in the tissues, of which the organism endeavors to free itself as soon as a favorable opportunity presents." The slowly healing sinus, with all the attending annoyance and discomfort, is the least of the evils. It will be noted that in nearly all the cases reported the constant suppuration so weakened the tissues that relapse soon followed.

Every abdominal surgeon of large experience knows that silk sutures, even when buried within the abdominal cavity, not infrequently find their way out in various ways. The presence of a suture in a hernia canal after firm union has taken place results rather in harm than benefit. Even the tendinous structures that go largely to make up the walls of the hernia canal require no more than eight to ten weeks for firm union.

The ideal suture, then, would be one that would hold the parts in apposition for this length of time and then disappear by absorption. In kangaroo tendon we have these conditions perfectly fulfilled. There has never been observed at the Hospital for Ruptured and Crippled a single case of delayed healing sinus when tendon or absorbable suture was used.

Unless those who use and advocate silk, silkworm gut, or silver wire in hernia operations are able to present some advantages to offset the serious disadvantages that have been demonstrated, I believe these non-absorbable sutures should be entirely abandoned.

REPORT OF THREE CASES OF XEROSTOMIA, OR DRY MOUTH.

By WALTER F. CHAPPELL, M. D., M. R. C. S. Eng.

The writer's case of xerostomia was shown before the Laryngological Section of the Academy of Medicine in May, 1895; for the histories of the other cases he is indebted to Dr. Beverley Robinson and Dr. Charles H. Richardson of this city. An anonymous communication in the *Medical Times and Gazette* of November 21, 1868, gave the first history and symptoms of an affection which was subsequently called xerostomia by Hutchinson and Hadden, mouth dryness being about the only symptom in the first cases which came under their observation. Since then some twenty-three cases have been reported. Many of these have exhibited symptoms and trophic changes pointing to the central origin of the disease. Dr. Frazer, in the *Edinburgh Hospital Reports*, volume i, collected nineteen cases; thirteen of the patients had dryness of the mouth, three had dryness of the mouth and nose, one had dryness of the mouth and eyes, and two had dryness of the mouth, nose, and eyes. The teeth were absent in five of these cases, and their disappearance dated from about the time of the first symptoms of mouth dryness. In one case the teeth were well preserved. No note was made concerning the teeth in the remaining cases.

The history of the writer's case is of special interest, inasmuch as the different symptoms and changes reported in the various cases were all exhibited in one patient. Furthermore, the nature of the death is an added proof of the central origin of the affection.

Mary K., aged forty-six, native of Denmark, came to the throat department of the Manhattan Eye, Ear, and Throat Hospital on the 14th of May, 1894, complaining of dryness of the eyes, nasal fossæ, mouth, larynx, and trachea. Her family history was clear with the exception of that of her mother, who had suffered all her life with epileptic attacks, which occurred three or four times a year. Personal history was free from any known rheumatic or specific affection. She married at twenty-two, but had no children, and enjoyed perfect health until five years ago, when she began to have dry sensations in the eyes and nose which obliged her to rub the parts considerably at times. The attacks were much intensified during the menstrual period, and markedly lessened between the periods; so much was this apparent that about the middle of the month the dryness lessened to such a degree that it caused little discomfort. As time progressed the dryness increased and extended to the mouth, tongue, pharynx, and larynx, and about the same time she noticed she had to urinate more frequently than usual. About four years after the onset of the mouth dryness the parotid glands began to swell; at first they were not tender, but a little later they would suddenly enlarge at times and become tender, and after two or three days gradually subside.

Condition on Visiting the Hospital. — General condition good, but she seemed nervous, talking fast and expressing herself in exaggerated terms, crying very readily, and altogether seemed in a condition bordering on hysteria. The dryness of the eyes, nasal fossæ, tongue, mouth, larynx, and trachea was complete and continuous, although the menstrual period had ceased for two years. The dryness of the eyes was so intense that the rubbing necessary to produce relief caused the conjunctivæ to become very red. The nasal fossæ were clear. Mucous membrane of the sæptum and turbinals was pale, atrophied, and dry. The tongue was very red, and the buccal mucous membrane somewhat pale and dry and sprinkled with small portions of food which adhered to the surface and caused constant desire to drink and clean the mouth. All her teeth decayed and crumbled so much that they had to be removed about a year after the first symptoms of mouth dryness. She also complained of a troublesome dry cough which nothing but oily sprays could relieve. The epi-

glottis looked pale and anæmic, and the arytænoids very red and somewhat swollen.

A small white patch at the lower part of the interarytænoid space was thought to be adherent mucus, but proved to be a small superficial ulcer, which was accompanied by another, a short distance below, on the posterior wall of the trachea. The walls of the trachea were red and dry in appearance.

Both parotids were much enlarged, especially the right, and seemingly consisted of three or four nodular masses, which were hard and non-sensitive and resembled those of a patient with severe mumps. Submaxillary glands were also enlarged, and the lowest of the posterior chain of cervical glands. Stenson's duct was patent.

The bladder symptoms had gradually increased, and when she visited the hospital she had a constant desire to urinate. Constipation was extreme. The temperature was taken at her first visit and registered 100° F., and at frequent subsequent intervals it was never found to be less than 99° F. in the mouth. Mastication or the application or administration of different medicines never started any appreciable secretion in the mouth. Taste was considerably impaired, and only some of the most pungent solutions were immediately detected. The nasal mucous membrane and the conjunctivæ were also particularly non-sensitive, as ammonia, oil of mustard, and such remedies produced little reaction.

The treatment of the case during the three months she visited the hospital consisted in the use of general nerve tonics, iodide of potassium, pilocarpine—in fact, everything was done that it was thought might relieve the extreme dryness. The laryngeal and tracheal ulcers healed under applications of nitrate of silver. She ceased visiting the hospital early in August, 1894.

Her next visit was on February 4, 1895, and was the result of a communication I had sent her. She gave the following history: A few days after her last visit to the hospital she called at the house of a friend who had just died, and while there she became quite excited and suddenly lost the use of the left arm and leg.' She did not completely lose consciousness, but for a few moments was unable to speak. For a time she was confined to her bed, but improvement gradually set in and she now has some power in her hand and arm, and also became able to walk with assistance. Her body was well nourished, but her will power was evidently much weakened and she wept constantly. The parotid glands had increased considerably in size, but the dryness of the upper respiratory tract was not so great. Two weeks after her appearance at the Academy of Medicine she became very drowsy, and could only be aroused sufficiently to take nourishment. Eventually she became completely paralyzed on both sides, and died four weeks after I had shown her before the section of the academy. I regret to say a post-mortem was not allowed.

Case II (reported by Dr. Beverley Robinson).—On November 20, 1894, Mrs. X. called upon me professionally, sent by Dr. Demorest, of Passaic, N. J. She complains of an almost constant pain in the roof of her mouth. This pain has lasted several years and came on soon after a severe attack of grippe. Many medicines and washes have been tried without notable good effect. It has been considered to be a local manifestation of gout. This opinion was regarded as doubtful by other competent clinicians. Unquestionably she has other manifestations of gout—*i. e.*, enlarged and painful joints, particularly those of her fingers, and these joints have been made less painful by reason of antarthritic remedies. Patient has always been of spare habit, but remarkably active. She suffers from occasional pain in her temples and eyes. No organic disease has ever been discovered.

Repeated examinations of the urine have shown it to be normal. She raises occasionally a little thick phlegm which looks like boiled starch. The principal pain at the roof of the mouth is to one side of the median line. The gums are swollen. Patient is obliged to put a piece of brown paper against the painful region at bedtime to prevent contact with the tongue. She takes water frequently at night to relieve the buccal dryness. Formerly she was relieved a short while by mastication of food. Now, as soon as she stops eating, pain returns. Anything held in the mouth that excites salivation relieves her. She chews gum mainly because it is softer than most other useful substances. Patient has a floating kidney on the right side.

I gave the patient a solution of chlorate of potassium internally, hoping in this way to awaken the secretion of the salivary glands, and also prescribed tablets of tincture of strophanthus with the idea of strengthening her heart action. She returned in four days and told me that the potassium apparently increased the buccal pain. I repeated the chlorate-of-potassium solution, however, but advised her to take it in very small doses, well diluted. The strophanthus tablets were also continued. Patient was advised to hold wine of coca in the mouth to see if any lessening of the pain could be obtained. It remained without effect.

November 28th.—Urine again examined. No sugar; no albumin. Passes rather more than a quart in twenty-four hours; quantity variable, especially when feeling badly. Has headaches every three days. Patient believes them to be of rheumatic origin. Suffers at night from distention of stomach and bowels with gas. This distention is relieved with camphor internally.

December 5th.—Mouth dryness almost intolerable at times; has been worse since she took chlorate of potassium and strophanthus. Has taken cod-liver oil lately after meals, which improved her general condition and relieved her headaches. Mouth dryness and pain, however, are as bad as ever. Patient took colchicine and salicylate of sodium during three months without doing her mouth any good; was of evident service so far as joints were concerned. The use of olive oil, three parts, and oil of wintergreen, one part, locally applied to the mouth gives slight temporary relief. Has had stomach lavage. This appeared to relieve her headaches, but did not affect the pain in the mouth, jaw, or tongue, where it now is.

20th.—Patient took a little brandy and water the other day and her mouth has been more painful ever since. Thinks the bad condition of her stomach caused it. I tried her with frequent doses of calomel, soda, ipecac, and bismuth, but with no result.

In reply to a note from me the patient writes from Morristown, N. J., that she has been under Dr. Barker's care since she last saw me, but there has been no improvement; in fact, she says, "I fear it grows slowly worse."

Case III (reported by Dr. Richardson).—Miss X., aged sixty, applied to me for treatment of her condition in January, 1893.

The following history was given: Several years previously the patient had sustained a severe nervous shock. A sister had been stricken with a fatal apoplexy in her presence. For the four succeeding years Miss X. was an invalid and under medical care for nervous prostration. She suffered much from headache and insomnia and had attacks of intermittent deafness. She acquired the habit of taking camphor, eight to ten drops of the tincture several times daily. About the fall of 1890 the teeth began to crumble and decay, neces-

sitating the extraction of nearly all. At this time also was the dryness of the mouth first noticed. She could no longer moisten a postage stamp sufficiently to make it stick.

When she came under my observation she was markedly neurasthenic. The mouth was dry. The mucous membrane was rather pale. She swallowed dry food with extreme difficulty and used frequent draughts of water to facilitate deglutition. There was no change apparent, either to sight or feeling, in the salivary glands. She passed a large amount of pale urine of low specific gravity, 1·004 to 1·006, without casts. Neither galvanism nor faradaism of the glands produced any appreciable result.

Pilocarpine in small, repeated doses, a fifteenth to a tenth of a grain every two to three hours, produced a fair amount of moisture in the mouth.

She has been kept on general tonic treatment for the past theee years, and while her general health has improved the dryness of the mouth remains the same.

In order to have some standard by which I might roughly determine the amount of moisture present in the mouth, I devised a test paper as follows: Some ordinary blue litmus paper was rubbed over with finely powdered and absolutely dry tartaric acid. This produced no change in the color of the paper, but when applied to the moist normal tongue it *instantly* became of the characteristic red. In the case which forms the basis of this report this test paper applied to the dorsum of the tongue required forty seconds' application before the characteristic change was developed. On the floor of the mouth, by the orifice of Wharton's duct, where in the normal mouth there is usually a little lake of saliva, thirty seconds were required to change the color.

A CASE OF AMNESIC APHASIA,

WITH REMARKS ON ÆTIOLOGY.

By FREDERICK T. SIMPSON, M.D.,
HARTFORD, CONN.

T., aged seventy-two years, accountant, a good linguist. A slight but gradual decline in mental and physical vigor was noticed by his friends, greater perhaps than usually goes with advancing years. On one occasion a degree of mental bewilderment, with flushed face and unsteady gait, was noted, in consequence of which he rested in his room a day or two. There was, however, no paralysis, loss of consciousness, or language disorder by which any definite lesion could be made out. During the following year there was rapid impairment of mental faculties along certain lines, in consequence of which he was obliged to give up his work.

Present State, May, 1894, as shown by many Examinations.—No hemiplegia; vision, ½; hearing, ½; can understand spoken language perfectly; articulation unimpaired; can repeat anything said; reads aloud fluently and understands; can write to dictation and to copy, but his writing, though legible, is not very good, and becomes illegible when he gets tired; knows uses of objects. Thus the hearing, talking, reading, and writing centres are unimpaired, and the conduction pathways so far as examined.

On the other hand, he can not give my name, or the name of any of his table companions, or of any other person except his own. He can not name any city in the world but Hartford and Enfield. He can not name the street he lives on or any street in Hartford. All proper nouns are gone from him. As to common nouns, he can not name such familiar objects as stocking, lampshade, register, when pointed to. A tape measure he calls string; a blotter, paper; a bandage, cloth. He knows the technical name the moment I give it, but can not recall it even with the aid of vision. If I ask him to tell me what he did yesterday or this morning, he is unable to get beyond the first noun. By guessing at and supplying him with the nouns he needs, I can get him to relate his experience. His ordinary conversation was limited wholly to replies to questions addressed to him, using in his reply the words of the question.

The power for spontaneous writing was interfered with in the same way. I asked him to write me a note, and after working for some time he gave it up, unable to produce anything but a series of five or six entirely illegible words, each word beginning with a capital D. On the other hand, if I said, "Write down the name of the street you live on," he would at once write very legibly "the name of the street you live on." Then he would realize that he had not done what I wanted, and he would start again and write the same thing, and sometimes get very much vexed because he could only produce the words of my question.

In arithmetic, he could add and multiply on paper quite correctly. Subtraction was apt to be wrong, and the process of division was quite gone from him. He could spell words perfectly; such words as dictionary, literature, apotheosis—the longest and hardest words I could think of—he invariably spelled correctly. He spelled with great rapidity, not stopping to pronounce syllables. He never could print words.

He could draw objects and maps and locate cities, etc., mentioned to him. He could repeat the days of the week and months of the year correctly if started; otherwise not. His time and locality sense were good. He lived absolutely alone and took care of himself as nicely as ever. He gave up reading because it tired and confused him, and spent most of his time on the street and horsecars. He died after a short sickness, at the seaside, and an autopsy was not permitted.

The foregoing appears to be a case of pure amnesic aphasia—that is to say, of an inability to express thought by language, either articulate or written, due to forgetfulness of words. If we consider a gross lesion to be the basis of this particular case, it would be difficult to give its precise location. In the early part of this century cases were reported by Baron Larrey, of France, and Dr. Hood and Dr. Hun, of this country, in which the main symptom was amnesic aphasia, and the post-mortem lesion was in the frontal convolution. One or two recent cases of the same kind might be quoted. On the other hand, theoretical consideration would indicate the temporal convolutions as the seat of lesion. The temporal convolutions are trained for eighteen months or two years before the other speech areas, and, as we say in common parlance, the ear is the guide to the tongue in learning to talk, or the temporal to the frontal convolutions. So in writing, as Grashey pointed out, the sound word always comes up before it is transferred to the paper or can be. It is Bastian's view that all language processes are initiated by the temporal convolutions. A modification of this theory as applied to the explanation of amnesic aphasia is the scheme worked out by Broadbent some twenty years ago, according to which all the sensations imparted by an object through sight, hearing, touch, taste, and smell converge to a single point in an area which might be called the naming centre, and which he placed provisionally on the lower surface of the tem-

poral lobe. Destruction of this centre would cause loss of memory of names or nouns. This theory is supported by the findings in a case with autopsy published a year ago by Mills and McConnell, of Philadelphia. In the history of this case one of the earliest and most marked symptoms was amnesic aphasia, while the oldest part of the lesion was the centre of a tumor occupying the third temporal convolution. Few neurologists, however, I think, believe in the existence of a separate naming centre. Starr, who is probably the best authority in America on the subject of aphasia, surmised some years ago that amnesic aphasia was due to a lesion of fibres beneath the temporal gyri.

In the *Berlin Medical Weekly*, No. 14, 1895, Bianchi gives the case of a printer with right hemiplegia, who was able to comprehend spoken language, could articulate perfectly, and could write to dictation. But spontaneous speech and spontaneous writing were defective, and he could not read or write to copy. Autopsy showed, besides spots of softening in the right hemisphere, in the left hemisphere a spot of softening in the angular gyrus. The inference was drawn by the author that in the case of this printer the word memories of internal speech were received from the visual areas instead of the auditory, and that in some instances amnesic aphasia was consequent upon lesion of the angular gyrus.

Here we have, then, lesion of the frontal, temporal, and angular convolutions, each accompanied by amnesic aphasia. This would seem to indicate the close unity of the parts of the speech mechanism, and that internal speech may be carried on by either of the three mentioned areas. Judging by introspection in my own case, I should say that in a large proportion of words all three centres acted at the same time, somewhat after the manner that tones and overtones are mingled when any chord is struck on a piano. If I recall a Greek word, it is as printed, while a German word is in memories of articulation predominantly. But, at the same time, I can seem to distinguish the other elements, though they are less vivid. At all events, one can say that, while any lesion producing amnesic aphasia plus word blindness, word deafness, or motor aphasia could be readily located, the diagnosis becomes merely conjectural if amnesic aphasia is the only symptom present.

There is a form of aphasia, first noted by Grashey, in which neither centres nor conduction pathways are injured, and it is due to a diminished duration of cerebral processes. This condition was evident in my patient, who, for example, could spell aloud any word I gave him, but it would not stay long enough in his consciousness for him to print it. But not so much diminished duration as diminished intensity of cerebral processes was the cause of the aphasia in this case.

Three conditions are known to be requisite for nerve processes to be perceptible in consciousness. First, the duration of them must not fall below a certain point (Grashey's aphasia). Normally, this is three times as long as the duration of a spinal reflex. Second, a certain intensity is required without which they fail to awaken consciousness. The third condition is change. Even in a state of health and youth, a large portion of the work of the brain is done below the ego-consciousness. In senile decay, the cell discharges must be relatively feeble, and many of them cease altogether, and many more fail to be perceptible in consciousness. We all recognize the enormous difference between looking at an object and then shutting the eyes and trying to recall it into consciousness. In the one case, a nerve current runs back from the retina, being a continuation of the light wave, and presents itself in consciousness. In the other case, a nerve current has been generated within the cell or cells which act as a storage of the residuum of the original impulse. Compared to the first current in point of intensity, the second is extremely feeble. Now, in reading the printed page or listening to the speaking person, it is the powerful external impulses which reach our consciousness. Spontaneous speech and spontaneous writing, on the other hand, depend wholly on the currents originated internally. In this case of mine, with a history of gradual, so-called mental decay, with dulled vision and hearing, large quantities of the internal storage batteries were either destroyed or incapable of discharging a current strong enough to be perceived in consciousness, unless re-enforced from without. There was no special continuous area of softening. There was rather a more generalized decay of cell structure which must necessarily overtake first those cells or collection of cells least frequently used, and hence least generously supplied with nutriment. Words were lost to this man in this condition, just as they are to any of us, both as regards our mother tongue and other tongues we may acquire, on the principle of use or disuse, other conditions being the same. There was no absolute selection of nouns in this case. In ordinary conversation, the pronouns, prepositions, verbs, adjectives, etc., are few and constantly repeated. They express over and over again the relations of things or nouns. Nouns, on the other hand, are so multitudinous in number that the possibility of any one of them being frequently repeated in comparison with the other parts of speech is absolutely excluded.

Other conditions of amnesia can not be discussed here, but it seems as if enough had been said to justify the conclusion that amnesic aphasia occurring without other localizing symptoms, as in the present case, may be due not to local softening, but to a generalized cell decay affecting the intensity of internally originated nerve currents.

A PECULIAR CASE OF STRANGULATED UMBILICAL HERNIA.*

By MORRIS N. BEMUS, A. M., M. D.,
JAMESTOWN, N. Y.

Mrs. S., a large, fleshy woman, aged eighty years, had for a number of years a reducible umbilical hernia retained by a truss. On January 25, 1895, about noon, while lifting a pail of water, she felt "something give" in the rupture, as she put it. It immediately began to pain her. Upon examination she found the rupture had pushed itself out so far that

* Read before the Medical Society of the County of Chautauqua, N. Y., January 14, 1896.

she could not replace it. This had occurred several times before, but not for a number of years. At each of these times it had been replaced by taxis. I reached her within half an hour after the accident, and found her suffering considerably with colicky pain. Examination revealed a large, tense tumor, nearly four inches in diameter, slightly above and just to the right of the umbilicus. It was almost solid in its nature, due to the thickening of the abdominal walls from the constant friction of the truss. Beneath this mass the strangulation had occurred. As we know, owing to the pliability of the abdominal walls, we can not hope for any aid from gravity in the reduction of an umbilical hernia, and the moment I attempted taxis I despaired. It seemed impossible to locate the channel of its escape through the hard, calloused tissue overlying the constricting ring. Hoping against hope, I attempted reduction, but even now the hernia had become exceedingly sensitive, and the patient began to vomit. I sent for counsel. Dr. E. M. Scofield and my cousin Dr. William M. Bemus responded. They both tried taxis, and other methods, such as hot and cold applications, were resorted to, but it was very evident nothing short of an operation could relieve the strangulation. We undertook measures to this end at once. The patient would not consent to be removed to the hospital, and a room was prepared and made as aseptic as possible, but those who have operated in private houses fully realize under what disadvantages we are compelled to labor. The usual antiseptic care was taken in preparing the instruments and patient, and within three hours from the first symptom she was ready for the anæsthetic. By this time the pain had become very severe and the vomiting frequent, containing considerable fæcal matter. Ether was given. The patient was soon anæsthetized, and taxis was again attempted but proved unavailing.

The operation was then begun by making an incision about four inches in length directly over the tumor. The part just beneath the surface proved to be exceedingly tough in consistence, nearly two inches in thickness, and very deficient in circulation. Beneath this the fat must have been at least three inches in thickness. Finally the hernial sac itself was reached. It had forced itself through the tendinous fibres of the linea alba. These fibres formed a tense constricting ring, the edges of which were very thin, sharp, and unyielding. Finally, with great difficulty, but not before the original cut had been enlarged, a dull director was inserted and the strangulating band divided sufficiently at its upper aspect to allow the introduction of the finger. The probe-pointed bistoury was now introduced flatwise upon this and further division of the ring made. As this did not relieve the constriction, I also cut in the same manner the lower margin of the ring toward the pubes. This proved sufficient to overcome the strangulation. The hernia was prevented from slipping back into the abdominal cavity, in order that it might be determined whether the constriction had been severe enough to interfere with its circulation. It did not soon assume a normal hue, and it seemed probable the gut might have begun to ulcerate at the point of stricture, so intense had this been. There was only one way of learning the exact condition of the viscera, and that was by opening the sac. It was determined to do this, and it proved indeed wise, as the following will show:

A division of the sac disclosed the omentum and beneath it the intestine, which presented, instead of its usual gloss, a dark-red coloration. Upon drawing it out a little there was found a second constriction—a loop of the intestine was entangled in the omental folds which had become adherent. This was relieved by ligating the constricting band of omentum between two ligatures and removing about two inches of it. The intestine now assumed its normal hue. It was returned to the abdominal cavity, and after ligating and removing another small portion of the omentum which appeared congested, and returning the stump, all bleeding having ceased, I closed the abdominal wound.

Owing to the thickness of the abdominal wall it seemed impossible to stitch the peritonæum with a separate row of sutures, as is customary. For this reason only one row was introduced. These sutures—three in number—were of silkworm gut and passed through the integument, muscles, fascia, and peritonæum, a quarter of an inch from the margin of the wound. When tied, the two sides of the wound were brought in excellent apposition, but, to make the external margin still more approximate, the integument was stitched with several catgut sutures. The wound was dusted with boric acid and a thick pad of iodoform gauze applied, being held in place by a wide bandage. The operation lasted in the neighborhood of an hour, and at its completion the patient seemed to be in a remarkably good condition. The vomiting ceased immediately after the operation, although she was troubled somewhat with nausea. She rested well during the night and seemed bright the next morning. Temperature at 8 A. M., 100°; pulse, 70; she began to take nourishment.

On the following day, January 27th, she appeared rather restless, had some headache and nausea, and was troubled with flatulence. Temperature, 101·8°; pulse 75 and intermittent.

January 28th, 8 A. M.—Has had a fair night; is taking and retaining nourishment nicely. She complains of some pain over the abdomen.

29th.—Has had a more restless day and night. Complains of feeling exhausted. Temperature, 101·4°; pulse, 80, regular.

30th (the fifth day after the operation).—Has had a good night. Temperature, 99·8°; pulse, 66; an evacuation of the bowels was secured by castor oil.

31st.—Feeling exhausted and restless and having considerable pain in the bowels. Temperature, 99·2°; pulse, 68.

February 1st (the seventh day after the operation).—Has had an uneasy night. Temperature, 98·6°; pulse, 60. Wound dressed for the first time. There had occurred a stitch abscess in the thickened mass of tissues which has already been referred to as having resulted from the friction of the truss worn for so many years. Otherwise primary union had taken place. This abscess healed in about a week. The patient had no other complications. Within a month she was about and able to perform her ordinary household duties. As a precaution she has worn a pad, but she has never had any recurrence since the operation, and is now in excellent health.

REPORT OF A CASE OF CHRONIC ALCOHOLISM TREATED EMPIRICALLY,

WITH APPARENT CURE.

By EDWARD L. MUNSON, M. A., M. D.,
FIRST LIEUTENANT AND ASSISTANT SURGEON, U. S. ARMY.

Sergeant P. C. has always been considered by his superior officers as an able, trustworthy, and painstaking man when sober, but for the past ten or twelve years he has been in the habit of indulging in a debauch at intervals of three to six weeks, these debauches lasting days or even weeks—thus greatly impairing his efficiency and reliability.

He was an irregular rather than a steady drinker, was fully aware of the evils incident to his habits, but, while anxious for reform, appreciated that this could never be ac-

complished by his own unaided efforts. He had on several occasions received sedative treatment from me during the late winter and spring of 1894–'95, was in hospital for alcoholism during April, 1895, and finally, on May 9, 1895, was placed in hospital and a treatment outlined which in nine days resulted in cure. He entered hospital after a debauch of a week's duration, unable to converse intelligently, breath foul, tongue coated, and tongue and extremities markedly tremulous. There was considerable gastric irritation with constipation, and a cathartic of magnesium sulphate, with black coffee and strong beef tea, was at once given. A hypodermic injection, consisting of 0·031 of a grain of sulphate of strychnine, 0·007 of a grain of sulphate of atropine, and 0·123 of a grain of sulphate of morphine, was ordered to be given three times daily, and at these times the patient was allowed to drink as much whisky or brandy as he desired, which was considerable during the first thirty-six hours of treatment.

Immediately following the administration of the alcoholic the hydrochlorate of apomorphine was given hypodermically, beginning with a dose of 0·062 of a grain and gradually increasing to 0·092 of a grain, the intention being to produce a gradually increasing nausea, which would finally become so great as to result in actual vomiting. The patient was repeatedly impressed with the idea that the medicines administered were incompatible with alcohol, and that their continued use would result in an intolerance by the system to alcoholics. All craving for liquors disappeared at the end of the second day, and on the third day whisky had already become extremely distasteful, but was ordered continued in doses of thirty to forty cubic centimetres, as before.

On the fourth day the atropine and morphine were discontinued, and the dose of strychnine was increased to 0·046 of a grain, which appeared to be about the limit of tolerance, and this treatment continued for three days. On the seventh, eighth, and ninth days the whisky was omitted once daily, and at these times a hypodermic injection of distilled water was substituted for the apomorphine, the previous conviction that the nausea and vomiting previously experienced were due to the antagonism between the drugs and alcohol being thus strengthened. At the end of nine days the above-described treatment was stopped, a simple tonic of nux vomica, cinchona, and gentian was ordered to be taken for a fortnight, and the patient was discharged from hospital.

At that time the patient was nauseated at the thought, sight, or smell of whisky, and this condition has continued up to the present time—a matter of nine months. Since this treatment, according to his own testimony and that of his superiors, he has not touched a drop of liquor of any kind; his former habits and inclinations appear to be broken off and the cure to be complete.

The cure is, of course, due to suggestion and the association of ideas, combined with whatever tonic and anti-alcoholic properties may be possessed by strychnine. The method here employed, although empirical, has certainly brought about an unexpectedly successful result in an especially unpromising case, and it would seem as if this method, in selected cases, were worthy of a more extended trial.

The New York Celtic Medical Society.—The programme for the meeting of Thursday evening, February 27th, included a paper on Appendicitis Medically and Surgically Considered, by Dr. Joseph Gray.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co.
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, FEBRUARY 29, 1896.

THE RÖNTGEN PICTURES.

Pictures taken by means of the Röntgen rays continue to be the subject of speculation—for it is thus far little else—as to their prospective value in medical study and practice. The pictures themselves have been reproduced in various publications, both here and abroad, so that by this time specimens, more or less crude and unsatisfactory for the most part, must have been seen by most of our readers. The one that we present in this number of the *Journal* seems to us to be far more sharply defined than almost any other that we have seen. It is a reproduction of one of Professor Röntgen's for which we are indebted to Dr. Newton M. Shaffer.

Many of the Röntgen pictures of the hand show a ring on one of the fingers. A noticeable point in all such pictures that we have seen, but one that, so far as we know, has not been made the subject of comment in print, is the fact that the outline of the ring does not project beyond the faint outline of the finger, and that, too, without any incurvation of the outline as if the finger were constricted by the ring. What the explanation of this may be we can not say, or whether it signifies some imperfection of the image that is likely to be produced with other articles and so impair the faithfulness of a silhouette taken by means of the X rays. Silhouettes, by the way, are all that these pictures are, so that it seems to be impossible by looking at a Röntgen picture of a hand, for example, to tell whether one is viewing the palmar aspect of the right or the dorsal aspect of the left hand; not, however, that it is important that it should be possible to do so.

For the present we are content to use the simple term Röntgen pictures, and we know not why that should not continue to be a good enough name. That, though, is not the general opinion, to judge by the many names that have already found their way into print. Such of these names as are not barbarous are not sufficiently distinctive to answer any good purpose, and some of them are both barbarous and indistinctive. "Actinograph," for example, together with the equivalent hybrid "radiograph," can mean, etymologically, only a ray picture, which is precisely what an ordinary photograph is. "Skiagraph" might do were we to commit ourselves fully to the shadow-picture notion, which does not quite seem judicious at present.

So far as turning the Röntgen process to account in medicine is concerned, diagnosis seems to have engrossed nearly everybody's attention. We shall be much surprised, however, if other and quite as important applications of it within the

domain of medical science are not made. We should say it might be found very useful to illustrate clinical records, for example, in many cases in which it would be quite unnecessary for diagnostic purposes.

A NEW ARROW POISON.

In the *Centralblatt für innere Medicin* for January 25th Professor Leubuscher, of Jena, states that he has recently examined a small quantity of an arrow poison brought from Borneo by Professor Kükenthal in 1894. It had been prepared in Long Mari, a village on the northern coast of Borneo, on the Baram River, about two hundred English miles from the mouth of that stream. The warrior who had given the specimen to Professor Kükenthal had told him that it was effective only when it was fresh, but had given him no information as to its source, save that it proceeded from a tree concerning which the natives related that the rhinoceros fed on its leaves with impunity, but that, if the beast's dung happened to fall into the water, the fish in the immediate neighborhood became stupefied.

Professor Leubuscher mentions some of the difficulties that beset the investigation of arrow poisons, but adds that, in spite of them, the examination has something more than a theoretical and scientific interest. He mentions as an example the case of strophanthine, found in an arrow poison of eastern Africa, but now regularly employed in heart diseases. As regards the Borneo specimen, it consisted of about twenty-five grains of a dry, blackish-brown mass, structureless as examined with the microscope, except that through the black substance ran yellowish streaks here and there, and minute fat globules were to be seen in certain parts of the field. Chemically, says the author, this substance does not contain a glucoside, but possibly it contains an alkaloid in combination with an acid. He has examined into its physiological action on frogs, rabbits, and fishes. He injected a small quantity of a freshly prepared solution beneath the skin of a large frog, *Rana temporaria*, and for a few minutes there was no apparent effect. In from eight to ten minutes, however, the animal's movements were perceived to be more sluggish; it lay with its hind legs stretched out at full length, and weak clonic contractions of the muscles of the thigh took place. Irritation gave rise to brisk movements, and there were at no time any phenomena of paralysis. Within two minutes more the frog was dead. Its heart was found pale, bloodless, and firmly contracted in systole. A minute amount of the poison, about 0·077 of a grain, was injected into a medium-sized rabbit. In the course of twelve minutes the animal became restless; then a few gasps followed and it was dead. In this instance, too, the heart was found contracted, but the systole was not so pronounced as in the case of the frog.

Proceeding to a closer study of the poison in its action on the heart, Professor Leubuscher exposed the organ in a frog and injected a small quantity of the material under investigation. After a certain time irregularity of the heart's action was manifest; it seemed as if the blood from the auricles met with difficulty in distending the ventricles. Slowly but powerfully the ventricular wall contracted, and by its slowness the diastole was prolonged. Then arose an irregularity in the contraction of individual portions of the ventricle; sometimes only the apex contracted, and again only the base; the impression was as if peristaltic waves coursed through the muscular structure of the organ. A constantly decreasing part of the cardiac chambers became distended in the diastole, and finally the ventricles stopped in systole, pale, bloodless, and firmly contracted. No irritation could provoke any cardiac movement. The swelling auricles pulsated for a few seconds, and then they, too, were still.

In order to make a more accurate study of the effects on the heart in warm-blooded animals, the author connected a manometer with one carotid of a curarized animal, presumably a rabbit, so that the cardiac movements would be indicated on a rotating tympanum, and a cannula was inserted into the trachea which was to record the respiratory movements on the same strip of paper. Thus the various phases of the poisonous action could be followed. It was observed that in a short time after the injection of the poison the action of the heart became irregular, and that the irregularity increased more and more and was accompanied by a lowering of the blood-pressure which persisted until death took place. No increase of the blood-pressure was observed in any of the experiments, even when the action of the poison was prolonged by reason of its having been given in very small doses. In the early stage there was no acceleration of the heart's action, and subsequently the irregularity made it impossible to make satisfactory observations in regard to this point. The poison seemed to have no direct action on the respiration or on the peripheral nerves and muscles. Its effects on the heart were in no wise modified by section of the vagi or the use of atropine; it is therefore highly probable that the action of the poison is exerted directly on the organ, and not through the medium of the vagi.

The author's experiments on fishes proved harmless to those animals; from this he concludes that this arrow poison contains no derrid, the poisonous principle of *Derris elliptica*, and therefore is probably not identical with the "ipoh," or "siren," described by Lewin as a Borneo arrow poison.

MINOR PARAGRAPHS.

THE *JOURNAL OF EXPERIMENTAL MEDICINE.*

The somewhat belated initial number of this new journal, dated January, 1896, has just been received at this office. Great as were the expectations that had been formed of its excellence, they are abundantly justified. An introduction, by the editor, Dr. William H. Welch, of Baltimore, is succeeded by the following-named articles: Observations concerning the Bacillus Aerogenes Capsulatus, by Dr. William H. Welch and Dr. Simon Flexner, of Baltimore; Further Researches on the Closure of the Coronary Arteries, by Dr. W.

T. Porter, of Boston; The Effect of Odors, Irritant Vapors, and Mental Work upon the Blood Flow, by Dr. T. E. Shields, of Baltimore; The Vascular Changes of Tuberculous Meningitis, especially the Tuberculous Endarteritis, by Dr. Ludvig Hektoen, of Chicago; The Production of Diphtheria Toxine, by Dr. W. H. Park and Dr. A. W. Williams, of New York; The Mucin of White Fibrous Connective Tissue, by Dr. R. H. Chittenden and Mr. William J. Gies, of New Haven; and On the Action of Piperidine and Some of its Compounds, by Dr. Arthur R. Cushny, of Ann Arbor. All these contributions are of the greatest merit and importance, and two of them are elaborately illustrated. The number comprises 210 large pages of reading matter. The typographical work is excellent. It is announced that the numbers will not be issued at stated intervals, but that at least four will appear during the year, making a volume of from 600 to 800 pages. It must be said that the opening number places the journal at once on the highest plane of medical periodical literature, but this is no more than everybody expected from the character of the editor and from the make-up of his staff of associates.

THE ENTRANCE EXAMINATION IN THE STATE OF NEW YORK.

The contention of each party, promoters and opponents, of a bill now before the Legislature to put the entrance examination into the hands of the college faculties themselves (it is now in the hands of the regents of the university) has been so little considered by the physicians of the State in general that the results of the bill, should it become a law, are difficult to foretell with any near approach to precision; we therefore think the Legislature would do well to postpone action on the bill, especially as its provisions may be mixed up in the minds of some legislators, as well as a good many doctors, with those of the project to provide for preliminary examinations in certain early-class studies as a part of the final examination by the State after the candidate's graduation in medicine.

A JOURNAL OF THE MEDICO-CHIRURGICAL FRONTIER.

Among the new journals that have lately reached us is the first number of one entitled *Mittheilungen aus den Grenzgebieten der Medizin und Chirurgie.* It contains a long article on Pneumotomy, by Dr. H. Quincke, of Kiel; an article on The Present Status of the Radical Treatment of Prostatic Hypertrophy, especially by Castration, by Dr. P. Bruns, of Tübingen; an article on Ileus, by Dr. B. Naunyn, of Strassburg; and an article on Dangerous Hæmaturia as the First Sign of Incipient Renal Tuberculosis, by Dr. A. Trantenroth, of Stettin. These titles sufficiently exemplify the morbid conditions that may be said to belong to the neutral ground between medicine and surgery, which is the particular field of the new journal. It is edited by Dr. J. Mikulicz, of Breslau, and Dr. B. Naunyn, of Strassburg, and published in Jena.

THE OFFICE OF CORONER IN THE STATE OF NEW YORK.

There can be little doubt, we think, that coroners will soon be things of the past in the State of New York. In this issue of the *Journal* we print the text of a bill for their abolition that has been introduced into the Assembly. We understand that it was drafted by a number of gentlemen acting in conference—members of the New York State Bar Association, members of the Medical Society of the State of New York, and others. These gentlemen do not maintain that the bill is faultless, but they believe it to be as good a one as the Legislature can for the present be led to enact. We learn that the Assembly's judiciary committee will give a special hearing on it on Wednesday afternoon, March 4th. There may be some minor provisions of the bill that it will be thought wise to modify, but the bill as a whole seems to us worthy of support.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending February 25, 1896:

DISEASES.	Week ending Feb. 18.		Week ending Feb. 25.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	7	1	14	4
Scarlet fever	136	11	112	13
Cerebro-spinal meningitis	1	1	2	2
Measles	545	16	479	22
Diphtheria	256	28	250	40
Small-pox	0	0	0	0
Tuberculosis	103	132	66	126

A Bill to Abolish the Office of Coroner in the State of New York.—The following is the text of Assembly bill No. 906, introduced by Mr. Robbins on February 14th:

§ 1. The office of coroner in the several counties of this State shall be, and is hereby, abolished when the terms of office of the coroners in office at the time this act shall take effect shall expire.

§ 2. Coroners' juries, post-mortem examiners, and coroners' physicians shall be, and they are hereby, abolished when this act takes effect.

§ 3. On or after the first Tuesday of November, eighteen hundred and ninety-six, the appellate division of the Supreme Court for the first judicial department shall appoint four medical examiners and four assistant medical examiners, and assign them or any of them to duty in one or more districts in said department, and from time to time may reassign them or any of them from one district to another, temporarily or permanently, as it may deem best for the public service. Said appellate division of said department may also, in its discretion, before or after said day, appoint two other medical examiners for said department, one of whom shall be an expert pathologist, and the other shall be an expert chemist. The appellate division of the Supreme Court for the second judicial department shall, on or after said day, appoint two medical examiners for said judicial department, and not exceeding twelve assistant medical examiners. The appellate division for the third judicial department shall, on or before said day, appoint one medical examiner for each judicial district in said department, and not exceeding twenty-nine assistant medical examiners. The appellate division of the Supreme Court for the fourth judicial department shall, on or after said day, appoint one medical examiner for each judicial district in said department, and not exceeding twenty-five assistant medical examiners. The appellate division in each department, except the first, may also, in its discretion, on or after said day, appoint two additional medical examiners for each of the said departments, one of whom shall be an expert pathologist, and the other shall be an expert chemist. In making the appointments of assistant examiners, as herein provided for, the appellate division of each department shall designate the county in which each of such assistant examiners shall have his principal office and

discharge the duties of his office, and may, from time to time, assign them to duty from one county to another, temporarily or permanently, as it may be deemed best for the public service. The salaries or compensation fixed by the appellate division for each of said assistant examiners shall be a county charge upon the county in and for which he is designated to perform his duties, and in which he shall have his principal office, and shall be paid by the county treasurer of said county in equal monthly installments. The medical examiners and assistant medical examiners appointed under this act, and their successors, shall be duly licensed and registered physicians, and their appointment shall be made according to merit and fitness, to be ascertained, so far as practicable, by such examinations as the respective appellate divisions for each department shall prescribe. They shall be appointed and shall hold office for the term of six years, and until their successors are appointed and qualified, as prescribed by this act. In case of the death, resignation, or removal of any medical examiner or assistant medical examiner, the appellate division which appointed him may appoint his successor for the full term of six years. Any medical examiner or assistant medical examiner may be removed at any time for cause shown, by the appellate division of the judicial department which appointed him. He shall be furnished with a copy of the charges made against him, and shall have an opportunity to be heard in his defense. Each medical examiner, and each assistant medical examiner, shall, before entering upon his duties, take and file in the office of the clerk of the appellate division of the Supreme Court of his department his oath of office, and shall execute and file in said office a bond with two sureties, to be approved by said appellate division of the Supreme Court appointing him, or any judge thereof, in the penal sum of five thousand dollars, conditioned upon the faithful performance of his duties. If any medical examiner, or assistant medical examiner, shall neglect to qualify or to give a bond as herein provided, for the period of thirty days after notice of his appointment, the appellate division appointing him may revoke his appointment, and appoint another medical examiner in his place and stead.

§ 4. The respective appellate divisions of the Supreme Court for each department shall fix the compensation or annual salary, payable in monthly installments, to be paid to the respective medical examiners and assistant medical examiners appointed by said appellate division in the manner hereinafter stated, and may, from time to time, refix and change the same as to future but not as to past services. Said appellate division in each department may also make provisions for stenographic and other clerical assistance, and for office accommodations, and supplies for the respective medical examiners and assistant medical examiners within such department, and for the actual expenses of the medical and assistant medical examiners. Said appellate division for each department may also direct what county or counties within such department shall pay all or a proportionate share of the expenses of such stenographic and clerical assistance and office accommodations and supplies, and the same shall be paid as county charges by such county or counties.

§ 5. It shall be the duty of the appellate division of the Supreme Court of the State to make rules and regulations prescribing the powers and duties of medical examiners and assistant medical examiners appointed by it pursuant to the provisions of this act, and to change, alter, and amend the same from time to time as necessity may require. The appellate division of each department may make such additional rules in relation to the examiners and assistant examiners in such department as it may deem proper.

§ 6. It shall be the duty of every peace officer and of every physician, and of all other persons, to report immediately to the medical examiner or the assistant medical examiner of the district wherein the same occurs, every case of sudden or accidental death, or death by violence, or a body found dead, and the facts and circumstances attending the same. The failure of any physician or of any peace officer, or the willful neglect of any other person, to immediately make such report, is hereby declared to be a misdemeanor and punishable accordingly.

§ 7. It shall be the duty of the examiners and assistant medical examiners to examine into the cause of death of all persons who die by suicide, or suddenly, or by accident, or by violence, or may be found dead within the respective districts or counties to which said medical examiners or assistant medical examiners are assigned to duty, and each medical examiner and assistant medical examiner in each judicial department shall have such powers and shall perform such duties as shall from time to time be prescribed by rules and regulations or orders of the appellate division appointing him. Said medical examiners and assistant medical examiners are hereby authorized and empowered to administer oaths, and to take the ante-mortem statements or depositions of persons about to die from other than natural causes, and also to take the depositions of any person or persons concerning the cause of any death, and transmit the same to the district attorney of the county where any such death occurs. Whenever, during or after an examination by him, as herein provided, it shall appear probable to any medical examiner or assistant medical examiner that any person is criminally responsible for causing the death of another, such examiner or assistant examiner shall forthwith apply to a committing magistrate for a warrant for the arrest of such person or persons, and it shall be the duty of such magistrate so applied to, upon the filing with him of a written certificate of such medical examiner or assistant examiner, that upon an examination made by him there is probable cause to believe, and he does believe, that the person or persons named by him are criminally responsible for the death of any person or persons named, or designated as unknown, in such certificate, it shall be the duty of such magistrate, without further proof, to issue a warrant for the apprehension and arrest of the person or persons so charged, and to proceed with the examination of the charge so made in the same manner as in other criminal cases. It shall also be the duty of such medical examiner or assistant medical examiner to report the facts in such cases to the district attorney of the county where such crime has been committed, who shall also have power to issue a bench warrant for the apprehension and detention of the person or persons so charged with causing such death, and proceed to investigate the same before any magistrate within the county as aforesaid.

§ 8. Whenever any person has been arrested upon a charge of criminal liability for causing the death of another person and an autopsy or post-mortem examination shall be had upon the body of the person whose death has been so caused, said person under arrest shall have the right to be present in person or by counsel or with not more than two licensed physicians, when such autopsy or post-mortem examination is made after his arrest; but neither such person nor his counsel nor any physician so present representing him, shall have the right to take part in such autopsy or post-mortem examination, except to view the same.

§ 9. In any criminal action or proceeding or upon any proceeding arising upon a writ of habeas corpus or in relation to lunatics or habitual drunkards, the judge presiding on the

hearing thereof may, by a written order, require one or more of the medical examiners or assistant medical examiners of the State to examine any person, body, or thing in any way connected with the issues and matters involved in such action or proceeding, and to testify upon any hearing or trial thereof concerning the same. In any such proceedings not of a criminal nature, the court or judge requiring his attendance shall certify the amount of his compensation for such services, and of his necessary expenses therein, and the amount so certified shall be a county charge, and shall be audited and allowed by the board of supervisors of the county wherein such services are rendered, and be paid by the county treasurer. It shall be the duty of a medical examiner to attend upon any trial or investigation in any court in the judicial department in which he may be appointed, upon the requisition of the district attorney of any county in such department, or upon the direction of a justice of the Supreme Court of such department, and when such attendance is required in a county other than that in which he was assigned to duty and in which his principal office is located, his necessary expenses and disbursements in going and returning from such court and while there, when certified to by said district attorney or by a justice of the Supreme Court, shall be a county charge upon the county where such court is held, and shall be audited and allowed by the board of supervisors thereof, and shall be paid by the county treasurer.

§ 10. On and after the first Tuesday of November, eighteen hundred and ninety-six, the duties and powers of coroners in civil actions and proceedings shall, in all the counties of this State, except the county of New York, appertain to and be vested in the county treasurers of such counties, and in the county of New York, in the city chamberlain of the city of New York, and said respective county treasurers and city chamberlain shall, for the performance of said duties and powers of coroners in said actions and proceedings, be entitled to receive the same fees and percentages as are allowed by law for the performance of such duties by a coroner of said respective counties. Said county treasurers or said city chamberlain may deputize any person to perform said duties and exercise said powers in civil actions and proceedings, but shall be responsible for the faithful performance of said duties and the exercise of said powers by the person so deputized.

§ 11. When services are rendered in bringing to land the dead body of a person found in any of the harbors, rivers or waters of this State, the district attorney of the county in which said body is found may allow such reasonable compensation therefor as a medical examiner or assistant medical examiner who examines such body shall certify is fair and reasonable, and in accord with the services rendered; the said charges shall be paid by the county treasurer of such county upon the said certificate of said examiner or assistant examiner approved by the district attorney. This provision shall not be deemed to entitle any person to compensation for services rendered in searching for such dead body.

§ 12. The salaries of the medical examiners shall be paid by the State treasurer upon the warrant of the comptroller out of any funds not otherwise appropriated. The salaries of the assistant examiners shall be paid by the county treasurers of the counties to which they shall respectively be assigned to duty, and the necessary expenses of the assistant examiners other than those hereinbefore provided for shall be audited and allowed upon the certificate of a justice of the Supreme Court, that the same are just and reasonable, by the board of supervisors of the county in which they are assigned to duty.

§ 13. Nothing herein contained shall be deemed to restrict or otherwise affect the power and authority of the district attorneys of the respective counties to employ and fix the compensation of experts in criminal cases, as now provided by law.

§ 14. All provisions relating to coroners shall be deemed repealed as to each county of this State, when and as soon as the terms of office of the coroners of such county shall expire; and whenever the term of office of any coroner shall expire or he shall die or resign or be removed from office, no successor shall be elected or appointed in his place or stead.

§ 15. This act shall take effect on the first Tuesday of November, eighteen hundred and ninety-six.

The Harvard Requirement of a Degree for Admission.—Commenting on the faculty's decision to require, after June, 1901, candidates for admission into the Medical School to have a degree in arts, literature, philosophy, science, or medicine, the *Boston Medical and Surgical Journal* says:

"This step will place Harvard on record as a pioneer in the effort to produce a medical school of the highest grade, the Johns Hopkins being her only predecessor; and when the change is made, it is expected that there will be no danger of a serious diminution in the size of her classes. In the annual report for 1892 the dean of the Medical School called attention to the diminution in the proportion of college-bred men who had entered the school since 1884, in which year the maximum of 53·9 per cent. was reached. This diminution went on steadily until in 1892 the ratio was only 28·2 per cent., a ratio which with one exception was less than in any year since 1872. Since 1892, however, the ratio of graduates of colleges and scientific schools generally has been again on the increase, and in 1895 the proportion of students having such degrees as are to be required was forty per cent. The natural growth of the intervening years until 1901 should offset any shrinkage which may occur from this new departure. It is even highly probable that, as has been the result of previous steps to raise the standard, this movement may actually bring an increase of students to the school. Parents will not be slow to recognize the great prestige that the degree of such a school will give their sons in the outset of their professional career, and many positions will be open to men with this higher Harvard degree to which the graduates of other schools with a lower standard could not aspire."

The Late Dr. Herbert Saunders, of Kingston, Ont.—The medical department of Queen's University, Kingston, Ont., has suffered a second severe loss within the short space of a month in the death of Dr. Herbert Saunders, professor of clinical medicine, which occurred upon the 19th inst., from septic pneumonia. Dr. Saunders was a practitioner of eminent parts, and was widely and affectionately known in town and country as a constant and unostentatious friend of the poor. His loss, coming so soon after that of Professor Fenwick, will be severely felt.

The Late Dr. Richard M. Hodges, of Boston.—The *Boston Medical and Surgical Journal* publishes the following minute adopted at a meeting of the medical board of the Massachusetts General Hospital held on February 11th:

"The physicians and surgeons of the Massachusetts General Hospital desire to express their sense of deep and personal obligation to the late Richard Manning Hodges, for many years one of the ablest surgeons of the hospital, by entering the following minute upon their records:

"Wise in council, energetic and efficient in action, clear-headed, skillful, manly, and sympathetic, Dr. Hodges combined

to an unusual degree the qualities essential to the model surgeon. Through them he rapidly attained a leading position among the surgeons of New England, second only to that of his esteemed and illustrious colleague with whose name his own was usually coupled.

"A successful and experienced teacher, the importance of his example and of his services to the hospital in the training of his juniors will ever be gratefully remembered. Loyal and generous to them, both in and out of season, his willing strength was often called upon and never in vain."

The German Dispensary.—At the last scientific meeting of the attending physicians, held on February 18th, Dr. F. Schwyzer read a paper on Blood Diagnostics and Some of the Recent Important Discoveries in this Field. During the dinner following the meeting, a loving cup was presented to Dr. Ludwig Straus, in recognition of his twenty-five years' service in the dispensary.

The Methodist Episcopal Hospital, Brooklyn.—A competitive examination for the appointment of two internes will be held at the hospital, on Saturday, March 28th. The services are for two years each, and will begin, respectively, on July 1, 1896, and January 1, 1897. Applications must be made by personal letter, stating qualifications, and accompanied by at least two testimonials, one of which should be from a physician. Applicants may address the chairman of the examining committee, Dr. Glentworth R. Butler, No. 229 Gates Avenue, Brooklyn.

Change of Address.—Dr. R. S. York, to No. 1770 Washington Street, Boston.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from February 9 to February 21, 1896:*

Girard, Joseph B., Major and Surgeon, will be relieved from duty at the Presidio of San Francisco, Cal., and ordered to Jefferson Barracks, Missouri, for duty at that post, relieving White, Robert H., Major and Surgeon. Major White, upon being relieved from duty at Jefferson Barracks, will proceed to Presidio of San Francisco, Cal., for station.

Quinton, William W., First Lieutenant and Assistant Surgeon, will be relieved from duty at Fort Riley, Kansas, and ordered to Fort Logan, Colorado, for temporary duty.

Quinton, William W., First Lieutenant and Assistant Surgeon, is relieved from temporary duty at Fort Logan, Colorado, and ordered to Fort Grant, Arizona, relieving Straub, Paul F., First Lieutenant and Assistant Surgeon. Lieutenant Straub, on being thus relieved, is ordered to Angel Island, California, for duty at that station, relieving Flagg, Charles E. B., First Lieutenant and Assistant Surgeon. Lieutenant Flagg, upon being thus relieved, is ordered to Fort Du Chesne, Utah, for duty at that post, relieving Snyder, Henry B., Captain and Assistant Surgeon. Captain Snyder, upon being thus relieved, is ordered to Fort Ethan Allen, Vermont, for duty at that station.

Death.

Macauley, C. N. Berkeley, Captain and Assistant Surgeon, died, February 6, 1896, at Fort Logan, Colorado.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the two weeks ending February 22, 1896:*

Curtis, L. W., Passed Assistant Surgeon. Detached from duty at Indian Head Proving Ground and ordered to the U. S. Steamer Montgomery.

Dickinson, Dwight, Medical Inspector. Ordered to report as member of the retiring board, February 28, 1896.

Guiteras, D. M., Surgeon. Detached from the U. S. Steamer Montgomery and granted six months' sick leave.

Morris, L., Assistant Surgeon. Detached from the Naval Hospital at Philadelphia and ordered to the Indian Head Proving Ground.

Wales, P. S., Medical Director. Placed on the retired list from February 27, 1896.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the Nineteen Days ending February 19, 1896:*

Murray, R. D., Surgeon. When relieved at Tortugas Quarantine, to proceed to Mobile, Ala., and assume command of service. February 19, 1896.

Peckham, C. T., Passed Assistant Surgeon. To proceed from San Francisco Quarantine to Port Townsend, Washington, and assume command of service. February 6, 1896.

Kalloch, P. C., Passed Assistant Surgeon. When relieved at Cincinnati, Ohio, to proceed to Charleston, S. C., and assume command of service. February 6, 1896.

Williams, L. L., Passed Assistant Surgeon. When relieved at Charleston, S. C., to report at bureau, and then to proceed to Tortugas Quarantine and assume command of station. February 6, 1896.

Vaughan, G. T., Passed Assistant Surgeon. Granted leave of absence for seven days. February 17, 1896.

Cobb, J. O., Passed Assistant Surgeon. When relieved at Port Townsend, Washington, to proceed to Cincinnati, Ohio, and assume command of service. February 6, 1896.

Geddings, H. D., Passed Assistant Surgeon. When relieved at South Atlantic Quarantine, to report at bureau for duty. February 6, 1896.

Rosenau, M. J., Passed Assistant Surgeon. To assume command of the San Francisco Quarantine Station. February 6, 1896.

Nydegger, J. A., Assistant Surgeon. To proceed from Washington, D. C., to Reedy Island Quarantine for special temporary duty. February 17, 1896. To report at bureau preparatory to assuming command of South Atlantic Quarantine. February 19, 1896.

Resignation.

Strayer, Edgar, Assistant Surgeon. Resignation accepted, to take effect February 14, 1896.

Society Meetings for the Coming Week:

Monday, *March 2d:* New York Academy of Sciences (Section in Biology); New York Medico-surgical Society; German Medical Society of the City of New York; Morrisania Medical Society (private), New York; Brooklyn Anatomical and Surgical Society (private); Corning, N. Y., Academy of Medicine; Utica, N. Y., Medical Library Association; Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association (annual); Hartford, Conn., Medical Society; South Pittsburgh, Pa., Medical Society; Chicago Medical Society; Cleveland, O., Medical Library Association.

Tuesday, *March 3d:* New York Obstetrical Society (private); New York Neurological Society; Buffalo, N. Y., Medical and Surgical Association; Elmira, N. Y., Academy of Medicine; Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Society of the County of Herkimer (annual—Herkimer), N. Y.; Hudson, N. J., County Medical Society (Jersey City); An-

droscoggin, Me., County Medical Association (Lewiston); Essex, Mass., South District Medical Society (annual—Salem); Baltimore Academy of Medicine; Medical Society of the University of Maryland (Baltimore).

Wednesday, *March 4th:* New York Academy of Medicine (Section in Public Health); Society of Alumni of Bellevue Hospital, New York; Harlem Medical Association of the City of New York; Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond (Stapleton), N. Y.; Penobscot, Me., Medical Society (Bangor); Bridgeport, Conn., Medical Association.

Thursday, *March 5th:* New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua, N. Y.; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington); Cuyahoga, O., County Medical Society.

Friday, *March 6th:* Practitioners' Society of New York (private); Baltimore Clinical Society.

Saturday, *March 7th:* Clinical Society of the New York Postgraduate Medical School and Hospital; Manhattan Medical and Surgical Society (private), New York; Miller's River, Mass., Medical Society.

Births, Marriages, and Deaths.

Married.

Jackson—Diehl.—In Buffalo, on Wednesday, February 19th, Mr. Frank Darwin Jackson and Miss Charlotte Diehl, daughter of Dr. Conrad Diehl.

Jacoby—Almy.—In Little Compton, Mass., on Tuesday, February 18th, Dr. Douglass P. A. Jacoby, of Franklin, Mass., and Miss Mary Lois Almy.

Johnson—Parkington.—In Mountain View, Santa Clara County, Cal., on Thursday, December 5, 1895, Dr. Dwight D. Johnson and Miss Mabel Parkington, of Fair View Ranch, Redlands, San Bernardino County.

Died.

Daggett.—In New Haven, Conn., on Sunday, February 23d, Dr. David L. Daggett, aged seventy-five years.

Farragut.—In New York, on Sunday, February 23d, Gertrude M. Farragut, wife of Mr. Loyall Farragut and daughter of Dr. John T. Metcalfe.

House.—In Rockland Lake, N. Y., on Friday, February 21st, Dr. Henry H. House, aged fifty-five years.

Jaggard.—In Philadelphia, on Thursday, January 30th, Dr. W. W. Jaggard, of Chicago, aged forty years.

Jones.—In New Orleans, on Monday, February 17th, Dr. Joseph Jones.

Maull.—In Wilmington, Del., on Sunday, February 23d, Dr. David W. Maull, in the sixty-fifth year of his age.

Noyes.—In Providence, R. I., on Sunday, February 23d, Dr. James F. Noyes, in the seventy-ninth year of his age.

Salter.—In Bayonne, N. J., on Tuesday, February 25th, Dr. Joseph E. Salter, aged thirty-six years.

Saunders.—In Kingston, Ont., on Wednesday, February 19th, Dr. Herbert J. Saunders.

Storrs.—In Hartford, Conn., on Sunday, February 23d, Mrs. Jane D. Storrs, wife of Dr. Melancthon Storrs.

Taber.—In Woonsocket, R. I., on Thursday, February 13th, Dr. John N. Taber, aged sixty years.

Letters to the Editor

THE BATAVIA SCHOOL FOR THE BLIND.

183 Delaware Avenue, Buffalo, *February 19, 1896.*

To the Editor of the New York Medical Journal:

Sir: I notice in the *Journal* for February 8th I am quoted as saying that after a thorough examination of the inmates of the School for the Blind at Batavia it was found that twenty-two per cent. had no right to be there. As one or two have called my attention to this paragraph as a reflection upon one of the best institutions in the State, it is only right to say, what was explained in the passage quoted, that this twenty-two per cent. represents the inmates of the school who are there because of having suffered from purulent ophthalmia of infancy. As this is now recognized as practically a preventable disease, our committee, whose report seemed worthy of notice, simply wished to lay stress on the fact that so large a proportion of blind were at the school, not because of any fault of the institution, but because of improper care which these inmates had received in infancy, or more probably because of the lack of proper legislation then which compels nurses now to report such cases promptly to a legally qualified practitioner.

Lucien Howe, M. D.

LIGATION OF THE UMBILICAL CORD.

Louisville, Ky., *February 14, 1896.*

To the Editor of the New York Medical Journal:

Sir: The February 8th *Journal* contains an abstract from the January *Obstétrique*, of an article by M. Pierre Budin, upon Ligation of the Umbilical Cord.

The danger of improperly tying a voluminous cord is very rightly dwelt upon, but the author condemns a very valuable procedure when he raises so many objections to the rubber ligature. His objections are perhaps valid enough when applied to the rubber *ligature*; it will slip, and does become cracked and unfit for use when kept for a great while. But when these ligatures are cut from circular rubber tubing, these objections do not hold. The only requisite then for the use of the rubber ligature or band is an instrument which will stretch it sufficiently for the severed cord to be slipped into it.

Such an instrument has been devised by Dr. A. C. Kellogg, of Portage, Wis., and the instrument is styled the funis band applicator. The instrument, I see, is advertised on page 37 of the February 8th *Journal*.

I have been using this instrument for nearly a year now, and can ligate a cord more quickly and thoroughly than by any other method, nor do I have the cord inspected at frequent intervals, as was my rule when using the ordinary ligature, fearing hæmorrhage.

Bleeding simply can not occur.

On the 9th ult. I used the band on a child whose cord was the largest I had ever seen, fully 2·5 centimetres in diameter. The cord was clamped with a hæmostat about six inches from the child; it was cut of the usual length, being grasped by the fingers to prevent hæmorrhage, and a band was applied with Dr. Kellogg's applicator. A second one was applied to the placental end of the cord, the forceps was removed, and the whole thing was done in much less time than it takes to tell of it. The cord rapidly mummified and dropped off yesterday, the fifth day.

I can not but think how much longer and how tedious it would have been if it had been tied by M. Budin's method.

Henry E. Tuley, M. D.

A CATARACTOUS FAMILY.

HORNELLSVILLE, N. Y., *February 17, 1896.*

To the Editor of the New York Medical Journal:

SIR: Ordinary mortals, when engaged in the pleasant pastime of relating anecdotes or "swappin' yarns," as the old salt very pertinently designates such employment of leisure moments, are wont to prelude their narrative with "That reminds me of a story." Hence it is that we doctors fall into the same habit and frequently avail ourselves of the "That reminds me" starter in narrating incidents in our professional career.

The particular narrative that has stimulated me to relate the following experience was that related in the article which appeared in the *Journal* of February 8th, under the title of A Cataractous Family, written by John L. Dickey, A. M., M. D., of Wheeling, W. Va.

Like Dr. Dickey, I have had to treat a family with a proclivity for cataracts, and, although a peculiar weakness of the iris for becoming incarcerated in the tissues of its natural protector seems to have been a family trait, as manifested in the three sisters operated upon, nevertheless good vision was secured in each instance, as will be shown farther on. Simple extraction was performed in every case. Prolapse of the iris was a subsequent occurrence in three of the cases. Excision of the protrusion was performed as soon as the condition was discovered in two instances. The other, being small, was not disturbed. These annoying sequelæ were not attended with any more serious results in any of the cases than that of retarding recovery.

I shall, however, keep these occurrences in mind, and should the two remaining eyes come to me for operation the combined operation will be the one unhesitatingly chosen.

The first operation was performed on January 10, 1890, upon the right eye of the oldest sister, then seventy years of age and completely deaf. Three months later the left eye was operated upon, the cataracts in both eyes being mature and hard. The results were very satisfactory. A small prolapse of the iris in the right eye was the only departure from two perfectly uneventful recoveries. After discission vision was $\frac{20}{30}$ in either eye with + 9·50 lenses, and J. 3 could be read quite fluently with the use of + 13 D. lenses.

On July 17, 1891, I removed a mature cataract from the right eye of the youngest of the three sisters. She was sixty-five years of age at the time of the operation. A prolapse of the iris occurred in this case and was excised on the fifth day. After discission of the opaque capsule vision was $\frac{20}{40}$ (+) with + 10 D., and J. 3 could be read well with + 16 D.

On January 23, 1894, I extracted a cataract from the left eye of another sister, who was sixty-seven years of age. Her recovery, like that of the two sisters who had preceded her, was retarded by a prolapse of the iris. This was duly excised, and after recovery vision was $\frac{20}{30}$ with the following: + 10·50 ⌒ + 3·50 cyl., axis 165°, and J. 3 was read with + 14 ⌒ + 3·50 cyl., axis 165°.

The only remaining member of this family that I have any knowledge of was a brother who died some years previous to the time of my operation upon the oldest sister. I learned from one of the sisters that he had been blind for several years prior to his death. Whether or no the blindness was caused by cataracts, she could not inform me.

I should like to add in conclusion that, although prolapse of the iris occurred in the astounding proportion of seventy-five per cent. in this record of four operations, yet these three cases go to make up the seven per cent. of prolapses that have occurred in my first hundred cases of cataract extraction, several of which were performed in my office, from which the patient walked or rode home soon after the operation.

S. MITCHELL, M. D.

Proceedings of Societies.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Ninetieth Annual Meeting, held in Albany, on Tuesday, Wednesday, and Thursday, January 28, 29, and 30, 1896.

The President, Dr. ROSWELL PARK, of Buffalo, in the Chair.

(*Continued from page 253.*)

Vaginal Hysterectomy with Clamps.—Dr. W. E. FORD, of Utica, in a paper on this subject, said that vaginal hysterectomy had been done with clamps years ago, but the operation had been abandoned for the one with ligatures. Many preferred to leave the ligatures to slough, the vaginal wound being allowed to remain open. In cases in which the wound had been closed, abscesses had been prone to develop, and convalescence in them had not been more rapid than in cases in which the wound had been left open. It was almost impossible in suppurative cases to apply many ligatures without rendering the patient liable to sepsis, and hence he considered it much better to allow the vaginal wound to remain open. Dr. Jacobs, of Brussels, had maintained that the vaginal operation was safer with clamps than with ligatures, and he had presented in support of this assertion an extensive array of statistics. But he stated that the operation could not be done without the use of special instruments, and to this the author of the paper agreed. Jacobs's method was identical with that of Segond, except as regarded the use of these special instruments. The disadvantages were the discomfort caused to the patient by the presence of a number of clamps in the vagina and the danger of free oozing of blood into the vagina. Experience had shown the first objection to have but little weight, as the annoyance to the patient was not great; the second disadvantage was, however, in the opinion of the author, more serious. But if cylindrical pledgets were substituted for the gauze packing, as was done abroad, it was probable that there would not be so much danger from hæmorrhage. The author then exhibited the special instruments used by Jacobs. He said that, after having taken the usual aseptic precautions, a circular incision was made, according to this method, about half an inch from the diseased tissue, across the front of the cervix, and a similar incision was made posteriorly, leaving an isthmus corresponding to the base of each broad ligament. With stout curved scissors, keeping close to the uterus, the dissection was carried up for an inch or more, both in front and behind. The uterine artery was then grasped in the clamps. The uterus was next cut away to the end of the clamp, it was split, and the lateral halves were removed. He believed that the essential point in operating by this method was the skillful use of the special traction forceps and stout scissors. The recovery after the vaginal operation was much more rapid than after the abdominal operation, the patient often being up and around before the end of the second week.

Complications in Abdominal Surgery requiring Intestinal Anastomosis, and the Best Method of doing the Operation.—Dr. A. VANDER VEER, of Albany, read a paper with this title. He reported three cases as types of the methods employed. These cases had been urgent ones, and, like many others of this class coming to the surgeon, had depended for

their successful termination largely on the selection of a method which would be most rapid as well as sure. The most scientific method of intestinal suture, the author said, was probably that of Halsted, although it had received very little indorsement from the profession at large. In all methods of suture much time was consumed in the introduction of the sutures. Maunsell's method of anastomosis really presented the most reasonable and successful line of procedure, and he thought it was more likely to come into general use than any other method of this kind, unless possibly it was the method of L. Morrison, of England. The Murphy button was most useful in the class of operations reported in the paper, but the danger of the retention of the button was a real one. It could not be used in all cases of intestinal anastomosis; it was more appropriate for anastomosis of the small intestine. The author concluded that in incised wounds of the intestine, and in gunshot wounds of small calibre, the best method of treatment was by the Lembert or some similar suture, without mechanical device; but that for more serious cases, in which the element of time must be taken into consideration, the Murphy button was preferable.

Sloughing of Uterine Fibroids after Abortion and Labor.—Dr. M. D. Mann, of Buffalo, read a paper with this title. He said that the larger number of fibroids occurred in women who had borne no children or only one or two at a period remote from the occurrence of the fibroid. The uterus had the property inherently of suddenly increasing in size during pregnancy, and if such an opportunity for sudden and rapid physiological growth did not offer, it was easy to imagine that in many instances the result would be the development of fibroids. Still, it was well known that large fibroids might complicate pregnancy at times. In the gravid uterus fibroids grew with great rapidity, even though previously they had grown but slowly and had caused but little inconvenience. Of late, a large number of patients had been operated upon, mostly by abdominal section, but the results had been far from good. Although in some cases that he had observed the tumor had, to his surprise, caused little or no trouble during labor, yet statistics indicated that the mortality was very high where there had been no operative interference. Thus, in 597 cases collected by Stavely, in which nothing had been done to the fibroids until labor occurred, in 220, or thirty-seven per cent., the patients had perished. In 548 cases collected by the same author, fifteen per cent. of the patients had aborted, and in 307 cases in which the maternal mortality had been noted the death-rate had been twelve per cent. Certainly such dreadful statistics would warrant the general statement that interference was usually justifiable. As the distortion of the uterine canal made it impossible to entirely clear out the placenta and membranes after abortion, the great danger was from sepsis; therefore it should be laid down as a rule that, if sepsis occurred in a fibroid uterus after labor or abortion, unless the symptoms subsided very promptly under the use of irrigation and curetting, hysterectomy or myomectomy should be undertaken at once.

The Technique of the Improved Cæsarean Section.—Dr. H. J. Garrigues, of New York, in a paper with this title, described the details of the various steps in the modern technics of this operation. The chief points were: 1. To ascertain by percussion, before making the initial incision, that no knuckle of intestine lay in front of the uterus. 2. Manual dilatation of the cervix after the extraction of the child and the placenta, if this had not been done before, in order to insure good drainage. 3. *Wiping* out of the uterus and the removal of clots after the extraction of the child and the secundines. 4. Avoidance of curetting and of the use of antiseptics within the uterus. 5. Very gradual loosening of the elastic constrictor from the cervix and broad ligament and careful control of all oozing before the replacement of the uterus. The author said that, as a rule, the appendages should not be removed, as statistics demonstrated the fact that repeated Cæsarean section gave even a better prognosis than the first operation.

Dr. W. Gill Wylie, of New York, in opening the general discussion on the foregoing papers, said that in considering the rival merits of the abdominal and vaginal operations, it seemed to him better to have even ten per cent. of the patients affected with ventral hernia and their convalescence much slower, than to incur the risk of raising the death-rate even one per cent. He had done a hundred and five vaginal operations with good results, but these were to be attributed to the cases having been selected. In the vaginal operation, one was apt to tear an adherent ovary or tube or injure the intestine. He did not favor morcellation by the vagina in the removal of uterine fibromata.

Dr. Herman J. Boldt, of New York, asserted that the uterus was not only useless, but was dangerous, after the removal of the annexa, if uterine or pelvic inflammation was present. The danger of hæmorrhage from the clamp operation was not very great, if it was done only in suitable cases. and in such there was no need of allowing the clamps to remain for more than twenty-four hours.

Dr. Mann said he had done the operation of vaginal hysterectomy, as described in Dr. Ford's paper, with satisfactory results, and he had become convinced of its importance, but the great danger of producing intestinal fistulæ by the vaginal route should be carefully weighed against the disadvantages of the abdominal section. As to operations on the intestine, he would express his preference for the intestinal suture as compared with the Murphy button.

Dr. W. G. MacDonald, of Albany, described a method of securely clamping the broad ligament by means of forceps devised by Eastman.

Dr. A. H. Goelet, of New York, remarked that the present popularity of vaginal hysterectomy seemed to be chiefly due to its novelty.

Dr. J. Riddle Goffe, of New York, said that the use of tigatures or clamps was chiefly a matter of individual preference. In cases in which the tubes and ovaries were extensively diseased, he favored the removal of the uterus.

Dr. A. T. Bristow said that the use of mechanical devices in intestinal anastomosis did not require the same amount of experience and dexterity as the suture methods.

Dr. B. Farquhar Curtis, of New York, pointed out that a serious danger connected with the Murphy button was the likelihood of its becoming permanently obstructed by adhesions below the point of operation.

(To be continued.)

Book Notices.

A Manual of Physiology. With Practical Exercises. By G. N. Stewart, M. A., D. Sc., M. D. Edin., D. P. H. Camb., Professor of Physiology in the Western Reserve University, Cleveland, etc. With Numerous Illustrations, including Five Colored Plates. London, Paris, and Madrid Baillière, Tindall, & Cox, 1895. Pp. 796.

There is a surprising lack of good English text-books of physiology suitable for the medical student. This may per

haps be accounted for by the fact that with rare exceptions active physiologists have not cared to undertake the text-book drudgery. Professor Stewart, who fills the chair of physiology in the Western Reserve University, deserves the thanks of students. His book is constructed upon a new plan; 686 pages of actual text are accompanied by 90 pages of excellent and concise directions for practical work. The latter cover a hundred and twenty-four subjects and include many more than this number of chemical, physical, and operative experiments. The author's key-note, which should be encored, is found in the first line of his preface: "At the present day, to teach physiology by means of formal lectures and systematic text-books alone is no more satisfactory than it would be to till the farms of America with the wooden plow of Bengal." And farther on, in referring to his method, he says: "Cross-reference from lecture-room to laboratory and from laboratory to lecture-room, from the detailed discussion of the relations of a phenomenon to the living fact itself, is thus rendered easy, natural, and fruitful."

In the text he has gone over the beaten track of physiology, but he has done so with the fresh, imaginative enthusiasm of the research worker who knows the explorations of others along the highway and in the fields on either hand. With knowledge obtained in the laboratory and from the reading of original articles, he has produced, with literary skill, a stimulating and interesting book which is not a digest of other text-books. In most respects, he is unusually well up to the times; he gives, for example, three pages to a discussion of the all-important subject of "internal secretion," a term which, while prominent in the laboratories, can scarcely be found in the text-books. But he might well have unfolded more fully the latest views regarding the general structure of the nervous system; and the Ladd-Franklin theory of color-vision is not mentioned. His figures, mostly diagrams, are new, numerous, and, with a few badly drawn exceptions, excellent.

From its high scientific character the book deserves wide recognition, but, if it was intended for American students, why was an American copyright neglected until it was impossible? The author informs us that it is to be had of the Cleveland Medical Publishing Company.

The Art of Compounding. A Text-book for Students and a Reference Book for Pharmacists at the Prescription Counter. By Wilbur L. Scoville, Ph. G., Professor of Applied Pharmacy and Director of the Pharmaceutical Laboratory in the Massachusetts College of Pharmacy. Philadelphia: P. Blakiston, Son, & Co., 1895. Pp. 5 to 264. [Price, $2.50.]

It is not a common thing to find a book on pharmacy which is so thoroughly practical and useful as Scoville's *Art of Compounding*, and we venture to think that no book more adequately accomplishes its object. Dryness, the almost invariable feature of pharmaceutical works, is singularly absent from this one, and in its place is the readable and interesting consideration of things which, though more important to the pharmacist, are little less so to the physician. It is a mistake which the larger number of physicians make, and a serious one, too, to regard the medicinal combination of ingredients as beyond their province save as it applies to the correct writing of prescriptions, and most of us would be far better physicians if we had some intelligent conception of matters pharmaceutical, and regarded them not as things separated from our art, but rather as complementary to it. In correcting this error of omission the physician will find the book under consideration of the utmost assistance. It is so plainly and clearly written, it is so practical, and its matter is so useful and often so homely that it must be held almost as suitable for the physician as for those classes to which its subtitle dedicates it, students (pharmaceutical students, we presume) and pharmacists.

To give some idea of the amplitude of the work a statement of its chapter headings will be sufficient. The introductory chapter concerns the use of the senses in the practice of pharmacy. The prescription is next considered, with all that concerns it, ambiguity, error, doses, ethics, and many and valuable "general suggestions." Nomenclature is the subject of the next chapter, and in it are briefly given those things which concern the naming of medicinal agents. Then follow chapters each devoted to the thorough consideration of a variety of medicinal preparations, mixtures, emulsions, pills, etc. These chapters are exhaustive and yet not wearying, and they are practical to the last degree. The addition to each chapter of a number of specimen prescriptions, with detailed consideration of their compounding, is an excellent device. A short chapter is given upon "homœopathic pharmacy," which, though too brief for the pharmacist who would dispense the homœopathic remedies, is too long for the physician who is not a homœopathist. The concluding chapter is upon incompatibility. It is unusual in its clearness, and the examples of incompatibility in prescriptions given are numerous and well chosen. We have had pleasure and benefit in reading this book, and we gladly give it our commendation.

Laboratory Manual of Inorganic Preparations. By H. T. Vulté, Ph. D., F. C. S., Professor of Chemistry in Barnard College, etc., and George M. S. Neustadt. New York: George Gottsberger Peck, 1895. Pp. ii–180.

The character of this little book is clearly explained by the title. The various inorganic preparations are separately considered, not in a physical, physiological, or descriptive sense, but solely as concerns their laboratory manipulation and preparation in an economical and effective manner. These manipulations and methods of preparation are clearly and ably set forth in well-expressed though brief directions. The book is not one to be read through, and it is not the idea of the authors that it is readable, but as a laboratory companion, "in training the student to prepare his own reagents and to test them for the customary impurities," it will prove a work of considerable value.

De la stérilité chez la femme. Par le Dr. Auvard, professeur adjoint de la Maternité, etc. Avec 106 figures dans le texte. Paris: L. Battaille & Cie., 1896. Pp. xiii–313. [Prix, 5 *fr.*]

This work is chiefly of value for the account it gives of the history of the subject and of the various pathological conditions and abnormities which may give rise to the condition of sterility. We observe nothing new in regard to measures for overcoming sterility, with the exception of a syringe devised by the author by which the semen may be effectively and aseptically injected into the uterus. The success which has attended the various methods of artificial fecundation is hardly commensurate with the labor and pains which have been expended in a task which to most men must be exceedingly disagreeable. The book is well illustrated, is abundantly provided with clinical histories, and furnishes as satisfactory a consideration of the subject as has appeared since the work published by Sims.

BOOKS, ETC., RECEIVED.

Criminal Sociology. By Enrico Ferri, Professor of Criminal Law, etc. New York: D. Appleton & Co., 1896. Pp. xx–284.

Mittheilungen aus den Grenzgebieten der Medizin und Chirurgie. Herausgegeben von O. Angerer (München); E. von Bergmann (Berlin); P. Bruns (Tübingen); H. Curschmann (Leipzig); V. Czerny (Heidelberg); von Eiselsberg (Königsberg); W. Erb (Heidelberg); K. Gerhardt (Berlin); K. Gussenbauer (Wien); A. Kast (Breslau); Th. Kocher (Bern); R. U. Krönlein (Zürich); O. Leichtenstern (Köln); W. von Leube (Würzburg); E. Leyden (Berlin); L. Lichtheim (Königsberg); C. Madelung (Strassburg); J. Mikulicz (Breslau); B. Naunyn (Strassburg); H. Nothnagel (Wien); H. Quincke (Kiel); M. Schede (Bonn); K. Schoenborn (Würzburg); R. Stintzing (Jena); A. Wölfler (Prag); H. von Ziemssen (München). Redigiert von J. Mikuliecz, Berlin, und B. Naunyn, Strassburg. Erster Band. Ertes Heft. Mit 3 Abbildungen im Text. Jena: Gustav Fischer, 1895. Pp. 142. [Preis, 25 *M.*]

Transactions of the American Climatological Association. For the Year 1895. Volume XI, containing Part I of the Report of the Committee on Health Resorts and a General Index of Volumes I–XI.

Transactions of the College of Physicians of Philadelphia. Third Series. Volume XVII.

Anti-cholera Inoculation. Report to the Government of India. By W. M. Haffkine. Calcutta: Thacker, Spink, & Co., 1895.

On the Abuse of Alcoholic Drinks from a Sanitary Standpoint. Report of the Special Committee, presented at the Denver Meeting of the American Public Health Association, October 1 to 4, 1895. By Felix Formento, M. D., C. O. Probst, M. D., and E. P. Lachapelle, M. D. [Reprinted from the *Journal of the American Public Health Association.*]

A Contribution to the Study of Atresia of the Uterine Canal after the Menopause, with a Report of Three Cases. By Henry L. E. Johnson, M. D. [Reprinted from the *Journal of the American Medical Association.*]

Syphilitic Ulceration of the Rectum. By James P. Tuttle, M. D. [Reprinted from the *Journal of the American Medical Association.*]

The Rectum and Urethra as Related in Disease. By James P. Tuttle, M. D. [Reprinted from the *New York Polyclinic.*]

Hysteric Blindness and Pseudo-meningitis, with Report of a Case treated by Hypnotism. By Hugh T. Patrick, M. D., Chicago. [Reprinted from the *Journal of the American Medical Association.*]

The Nature of Inflammation. By Dr. Harry Hakes, of Wilkesbarre, Pa. [Reprinted from the *Transactions of the Luzerne County Medical Society.*]

Miscellany.

The Nature, the Cause, and the Treatment of Angina Pectoris.—In No. 44 of the *Asclepiad* Sir Benjamin Ward Richardson states that he has encountered forty-three well-marked illustrations of the disease called angina pectoris. The symptoms, he says, constitute fairly a distinct disease, and perhaps the term commonly chosen, angina pectoris, is the best name for it. As to the nature of the illustrations, they were of necessity very closely allied, and he noticed first that men were by far the most commonly affected. Twice only women had been the victims. Usually, too, the men were of middle age or past middle age. In the majority of instances they were past it.

The author states that he has tried to ascertain carefully if there was any direct heredity, and he has not detected the fact absolutely, although in one or two examples he suspected that there was some hereditary influence, but he was not certain. In a large majority there was, either by coincidence or by relation of cause and effect, a legacy of either gout or rheumatism from the father's side. At the same time he failed to trace in the sufferer the signs either of rheumatism or of gout from any of the common causes or conditions provocative of those affections.

By far the larger number of the sufferers were middle-aged men who had led a busy, often comfortable, and vigorous outdoor life. They were active men, and, as a rule, very laborious and troubled men. He dwells on the last-named fact earnestly, for it seems to him of intense moment. They were men who had had, or had felt they had had, a great deal to account for. They had been over-ambitious, and had failed to get all they wished; they had been men who were conscious of having done some wrong act or deed which they were ever afraid of being discovered; or they were of a most refined mental constitution, victims of a continuous fear lest in any way they might do something that should seem objectionable to the world at large. Finally, they had sometimes been persons who, against their will, had been forced to do more than was in their power, and had been perpetually harassed with difficulties they did not feel able to overcome, or did not feel capable of resigning to fate; as if so long as they lived, they were destined to bear and suffer.

It has been assumed, he says, that in all anginal cases there is certain evidence of disease of the heart, and that there is or must have been disease of the coronary vessels, dilatation or thickening of the coronary arteries, with defect in the coronary circulation. It is further assumed that if there is no disease in the coronary system there is disease of the heart itself; a valvular interruption or irregular action of the ventricular walls. These changes, he says, may be present, for he has found them after death, but they certainly are not necessary, and may be considered rather as coincident than as any sort of direct cause. The specific symptoms may be over and over again demonstrable, and there may be no evidence of cardiac organic failure.

It seems to him, therefore, that pure angina pectoris is not essentially cardiac, and that the presence of cardiac disease with it is rather collateral than necessary. The author does not wish to be understood as saying that true cardiac mischief may not render the condition of a patient more extreme or dangerous; but, he says, he would not exaggerate the combined evils, since there may be the extremest danger from the disease alone, quite apart from what would appear to be cardiac.

He has never seen any particular symptom that could be considered organically central in angina pectoris. During a paroxysm there is often a good deal of central disturbance, with a sense of giddiness, a sense of syncope, a feeling of dismay or fear, and a fixed desire to sit down, as if that prevented falling to the ground; there may also be distinct rigidity of muscles. But after the attack has passed away the mind is perfectly clear, and the whole of the events are duly recorded on the mind, without any further irregularity, residue of pain, discomfort, or spasm.

It is the same, he says, with the pulmonary organs, in so far

as intermediate indications go, though it is different in respect to the paroxysm itself. In the paroxysm, it must be admitted that the condition is simply terrible. It is in the chest that suffering seems to be concentrated. The chest is, as it were, pierced or transfixed through and through. The breath is held and, as more than one of the sufferers has expressed it, it is as if the chest were in a vise one blade of which was on the centre of the back and the other on the sternum at its centre. The chest feels as if it were filled and dilated with air which it is impossible to expel. The chest, in fact, can not be emptied—neither can it be dilated or filled; and the coldness of the surface of the body, the whiteness and fixity of the features, the condensation of water on the brow and running down the cheeks, and the apparently rigid state of the limbs, all testify that there is no true breathing power. Yet it is not asphyxia that presents itself; it is rather syncopal unrest; and, indeed, there appears to be no exhaustion of air or any change for the better until there is a certain degree of relaxation of the diaphragm and of the muscles of the intercostal spaces.

The author states that he does not know of any seizure in which the voluntary muscles were affected with violent convulsions. The voluntary muscles seem to be rigid, but not from any kind of active movement; they are fixed, but are rather void of motion than troubled by it. This is not the fact with the involuntary muscles. They are, he says, undoubtedly peculiarly influenced; they are seized with contraction, and there is sometimes the voidance of urine. It is also quite certain that "the semi-involuntary heart is held for a time in abeyance," and the same may be said of the involuntary or semi-voluntary organs of respiration, and occasionally of the intestinal tract, as shown by the escape of flatus.

With regard to the cause, says the author, in true angina pectoris there is no known and fixed organic manifestation of disease. This is a point always to be kept in mind. There are, in varied cases, collateral or coincident forms of disease, but these might be present although there were no signs of angina. In itself, angina stands alone, and that fact marks it as a distinct disease, a disease of a paroxysmal nature, and quite as distinct as epilepsy, partaking in many ways of its features, and being of a similar and of as universal a character. The difference is that epilepsy is an affection of the cerebro-spinal system, and is, therefore, attended by vehement contractions of the voluntary muscles, by which the accumulated muscular energy is thrown off, and, possibly, the cerebral and spinal; by which action life is for the time saved, although for a period brain power is suspended. Angina pectoris, on the other hand, instead of being dependent on a disturbance in the cerebro-spinal system affecting all parts under it, is due to a disturbance in the sympathetic nervous system, and affects all parts under that system. What the precise change in the sympathetic nerves may be, the author says he is not more able to define than he would be able to define that which occurs in the cerebro-spinal system in epilepsy. In both cases it is probably a change in the body of a ganglion or centre, extending throughout the whole supply, and causing effects in all the parts involved. In angina it is a violent sympathetic discharge with an unconscious spasm, a primary spasm of the unconscious or involuntary muscles. Everything in the attack points to this condition; the intensity, the comparative suddenness of the seizure; the connection of the seizure with intestinal disturbance; the increase of the seizure with those events which spring from tribulation of the sympathetic nervous chain; the phenomena presented on the surfaces that lie in the terminal nervous currents of the terminal vessels; the whiteness of the face; the fixed chest; the powerfully contracting heart; and the rigidity of the voluntary muscles when the heart and blood-vessels are unable to pour into them the necessary quantity of blood. In brief, the phenomena, one and all, show the universal change originating in the sympathetic centres.

The author says that we can not speculate on the nature of the change in the sympathetic cords or ganglia which gives rise to the anginal shock, a shock extending through the whole of the organic system. The irritation may spring from one large centre and may spread from it to the other parts.

With regard to the original cause, he says that he suspects a syphilitic taint leading to the nervous irregularity. The fact that the seizure is so much more frequent among men than among women leads him in some degree to this view, against which, however, it may be argued that men, although they know nothing of the pains of childbearing, have other cares and anxieties not belonging to the opposite sex. But the best evidence is that some men who suffer from angina have been subject to syphilis, more or less acute in character. It is, in fact, very rare to meet with a case in which syphilis can be altogether excluded; while it is certain that among men who are entirely free from the taint angina pectoris is rare, whatever may have been their troubles, their previous embarrassments, or their diseases. In fact, it looks as if the anginal symptoms often followed the specific malady; and he doubts if any one has seen a distinct angina pectoris in a middle-aged person free of a trace of a preceding syphilis, hereditary or acquired. He may have done so, but it has been an event of very rare occurrence.

He is satisfied on these points that the disease, angina pectoris, is a disease of itself, a disease of the organic or sympathetic system, as epilepsy is of the cerebro-spinal system, and that special disease of other organs, such as the heart and the vessels connected with it, is purely coincidental.

With regard to the treatment, says the author, the most anxious points which the physician keeps in view, when he has under his care a case of angina pectoris, are the best modes of treatment, either of a preventive or curative character. We must be honest in feeling on this subject, knowing, he says, that at our best we are limited in either the preventive or curative power that we possess, even in those examples that are freest from any kind of complication or concurrent ailment. It is further to be remembered that, when there is no complication, deaths from the seizure, and during it, are by no means rare; so that we have ever to be on our guard in relation to our prognostic indications.

In the more prolonged cases there is some hope of cure, though it may be remote, if the patient is young and if the attacks are slight and infrequent; it is true, he says, that he has seen what have seemed to be recoveries.

When we come to cases of a fixed kind, in which the seizures are of common occurrence, the treatment we have to adopt is both of a preventive and of an alleviative nature. We can not say that in any case we shall cure, but we may hope to prevent recurrences, and, when the attack comes, we may oftentimes give relief.

Whatever class of case may come under our notice, says the author, physicians are called upon to prescribe for the seizures with the hope of ameliorating them, and sometimes with the hope of preventing them, or it may be said, curing them, an apparent result which, as has been seen, is not at all times a failure. As regards nitroglycerin, during the paroxysm, the author has usually ordered from half a minim to two minims of what is called liquor trinitrini; but other practitioners, he says, prescribe it in the proportion of one

part by weight of nitroglycerin and ninety-nine parts of rectified spirit, while others use it in combination with oil, in the proportion of one per cent., giving from one to two drops for a dose. It has also been used in tabellar form.

Nitrite of amyl, the author says, was first introduced by him as a liquid to be inhaled in doses of from two to five minims. Later on, he made it into a mixture, so that it could be taken by the stomach slowly; this, he thinks, gives better effects than when it is inhaled, because when it is swallowed it seems to act favorably on the whole course of the sympathetic nervous system. As a mixture, he has usually combined it with glycerin, putting three minims to a drachm of glycerin, adding three drachms of water, and ordering that quantity, diluted further with an agreeable quantity of water, to be taken at intervals in the course of an hour.

The effect of either of the remedies described above is, he says, often strikingly beneficial. Their action is to take off blood pressure and relax the arterial system, so that blood can flow more readily through the lungs, through the heart, and through the general circulation. He fears neither remedy exerts a true curative action, for if it did we should really cure, whereas, as a rule, we only give relief. Even in cases of recovery we can not say that these remedies cure, but they certainly relieve. Thus, in the case of the medical friend to whom the author has referred as having seemed to recover, who went abroad to return with another malady, from which he did not recover, the nitrite of amyl, used by inhalation, relaxed the spasmodic condition so determinately that he carried the remedy about with him, and often during his midwifery practice, when he felt a seizure coming on, would inhale the remedy with the most striking relief. In the case of the schoolmaster to whom reference was made, and who was under the author's care so many years, the same happy results followed inhalation; and without prolonging the story, he does not think that for the past twenty years he has had a patient under his care with angina who has not benefited, more or less, by the scientific use of the two medicines in question. Further, he has never known a death to take place, or any injury from their administration. Some patients, he says, carry one of these medicines with them invariably, and learn how to use it with singular advantage.

We must concede, he says, that it is to the antispasmodic action of these two remedies that the immediate relief is due, and they should never, he thinks, be omitted. It is necessary, however, at the same time to look very carefully into all other details in respect to medicines. Sometimes a specific like iodide of potassium is advantageous. Sometimes iron, or quinine, or an alkali, or a diluted acid may do good.

Together with these medicinal methods, there must always be, in angina pectoris, most careful suggestions made as regards modes of life. As a strict rule, persons who are liable to attacks of the malady must be freed from excitement, from passion, from fear, and from everything that causes fatigue and what is called nervous exhaustion. If it can be done, patients of this class should undertake no active duties, should have plenty of sleep, and should be moderate in exercise, avoiding especially climbing, sharp riding, rowing, swimming, cycling, and active games. They are better on level ground, taking moderate walking exercise, and they may ride in the carriage. In fact, it is good practice for them to exercise the muscles moderately; they act wisely in taking light meals, and four light meals a day, of equal quantity, are better than indulgence in one heavy meal. Indeed, the author thinks he has more than once seen a fatal attack after a heavy meal. They ought, also, to avoid evening and night movements, since some are seized in the course of the evening, when they should be in bed or going to bed. Of all things, they should avoid political and public efforts, and should not allow themselves to be alone for long periods, or charged with any brooding care.

There is only one other point to which he would call attention. It is a very common practice among those who suffer from angina pectoris to conceive that a very free action of the bowels every day is necessary. They are troubled rather easily with flatulence, and they are wont to experience symptoms which seem to them to indicate hysterical derangement. This leads them to fly too readily to relaxing remedies. He agrees that the bowels ought to be relieved every day, but this should rather be done by dieting than by medicine; and every kind of irritant to the alimentary canal should be as far as possible avoided as dangerous, leading not infrequently to general irritability, feebleness, and a seizure.

Is Surgery a Cure for Cancer?—The *Liverpool Medico-chirurgical Journal* for January contains an article on this subject by Dr. E. T. Davies. Three years ago, he says, Dr. John Byrne, of Brooklyn, in his address before the American Gynæcological Society, said that the ambiguous manner in which the statistical tables of vaginal hysterectomy had been constructed was misleading and in some instances suggestive of erroneous inferences, and he drew the following conclusions: "As the average period of life in cancer of the uterus, when not operated on, is not less than two years, and often more, suffering has not been lessened, but aggravated, and life has not been prolonged, but shortened, in the vast majority of all cases thus far subjected to vaginal hysterectomy." Dr. Byrne's subsequent experience, says the author, is summed up as follows: "The field for vaginal hysterectomy in its application to uterine cancer, if indeed there can be one at all, is an extremely narrow one."

Hysterectomy for cancer, says Dr. Davies, is extensively practised in London, but statistics are, unfortunately, not issued; individual methods of performing partial or complete hysterectomy for cancer have been described, but the actual benefit obtained is only lightly illustrated by a few selected cases. Many distinguished physicians, he says, are advocates of surgery in uterine cancer, but their writings do not contain the facts which might support their advocacy. However, a few results of hysterectomy in malignant disease were reported last winter which may serve to replace the missing data. In seven cases the average duration of life after the operation was fourteen months, and in three of the author's cases the patients died within three months of the operation. In view of these facts, he says, the question arises, Is surgical interference a cure for cancer? The arguments advanced for the performance of hysterectomy are, he admits, of some force. They are foul discharges and hæmorrhages; and for a variable period of from six weeks to six months these symptoms are relieved, but there is a recurrence of the disease very soon.

With regard to cancer of the breast, an altogether different set of facts and arguments is met with. Sir Benjamin Brodie, says Dr. Davies, came to the conclusion, after having removed five or six hundred cancerous breasts, that he would never remove another without first laying before the patient the objection which his experience had shown him to exist to that operation—namely, that the practice tended rather to shorten life than otherwise. Sir James Paget, says the author, maintained that cancer was in the blood before it was in the breast; that we must look to constitutional and hereditary tendencies. He spoke with very great assurance of the specific nature of cancer as being almost certainly due to a

specific morbid material, micro-parasite or ptomaine, or to one or more of their products, and as being closely allied to other micro-parasitic diseases, such as tetanus, hydrophobia, tuberculosis, diphtheria, ague, actinomycosis, syphilis, and others; and he mantained, therefore, that the study of cancer and its treatment must needs be experimental, and once the morbid material was found it could be dealt with in the same way as other specific diseases.

Dr. Davies quotes from many other well-known writers on the subject and describes a number of operations which, he says, were no doubt perfectly justifiable, but he thinks that their inclusion in cancer statistics introduces confusion. He very freely expresses his doubts of the value of surgery in cancer, and adds that they have only grown stronger as his opportunities for observation have increased. The habit of thought, he says, should be changed in the treatment of cancer. More work from the pathologist and from the bacteriologist should be looked for and less from the surgeon.

In the discussion which followed the reading of Dr. Davies's paper at a meeting of the Liverpool Medical Institution, a report of which is published in the same journal, Mr. Paul expressed the opinion that cancer was local in origin, but that it could be originated only in tissues favorable to its growth, and that it could be cured by removal in the same sense that a tuberculous joint could be cured by excision. He gave his experience of the results of surgical treatment in cases of cancer of the region allotted to him—namely, the alimentary canal. He considered that surgical success depended upon early recognition, thorough extirpation, inherent favorable tendencies in the tumor, and judicious constitutional after-treatment.

Mr. Banks thought that if a cure was to be found it would be found in some drug. Of all the drugs that he had tried or had seen tried, arsenic, he said, was the only one that had given a faint ray of hope with regard to a cure. In lymphadenomatous glands, which practically became lymphosarcomatous, he felt certain that he had seen a diminution follow after pushing the use of the drug steadily from small to poisonous doses. Unfortunately, the patients could not stand the treatment for any length of time, and the slight improvement rapidly vanished. He said he believed that operative treatment, in a general way, was thoroughly justifiable if the surgeon honestly saw his way to a clean sweep of the disease. He thought that judicious operations would extend the average duration of life after cancer of the breast was first manifested, and any one who refused absolutely to remove breast cancers under any consideration was devoid of reason and of common sense.

Mr. W. S. Crawford reported four cases that had come under his personal observation, and stated that the results pointed to the curability of certain cases of mammary cancer by surgical means. He felt sure that the percentage of absolute cures would be larger if the patients were operated on earlier. Patients in whom the disease was moderately far advanced probably lived longer after operation, provided all the diseased structures could be removed, and suffered less than if not operated on.

Dr. Alexander thought that the results of operations for cancer were not satisfactory, although he did not doubt that surgery was sometimes a cure; but, he said, apart from cures, surgery gave distinct relief, especially in cancer of the tongue and of the rectum, where recurrences took place outside the intestinal tract.

Dr. Wallace said that if patients would only come early there might then be a favorable chance of eradicating the disease, if it was purely local, by surgical means. He regretted to say that surgery had afforded no permanent cure in over fifty cases, except in early instances of epithelioma of the cervix which had been amputated after the methods described in his published work, and taught for nearly twenty years in the Thornton Clinique. Except in one case of sarcoma uteri in which death had followed after operation—the only death of that class—not a patient had been operated on in whom the disease had been in an advanced stage, but only those in whom the uterus had not been enlarged, and had been normally mobile, and the disease had not extended beyond the cervix or beyond the organ in any direction into lymphatic cellular-tissue glands, either in the pelvis or in the groin. In every instance the disease had recurred, and the patients had all died from it. Dr. Wallace regretted that, after all this, he was afraid he was becoming a pessimist—apathetic somewhat as to operating, although still inclined to persevere with the tentative work in the very earliest stage only of the disease or in the pre-cancerous stage, when any one could point out to him how that diagnosis could be made. It was not now known, and guessing would not do. In epithelioma of the vulva, as in the uterus, the operation had been much more successful, but not in cases where the lymphatics and glands had been infiltrated with cancer, and enlarged. Mr. Paul had pointed out, he said, that hard work and abstemious living—in other words, living wholesome lives—tended to prevent the recurrence of cancer; but age, vigor, temperament, and diathesis had a great deal more to do with the slow or rapid course, and the recurrence. In the vulva, the perinæum, the anus, and the rectum the disease was early recognized, as in the lip, or in the orifices and external parts of the body, and hence operations were justified by their successful results, immediate and final. He had excised epitheliomata of the vulva, the vagina, the urethra, the clitoris, the perinæum, and the anus, also the whole rectum, with invariable success, in old women, that is to say, in those considerably over the climacteric, when vascular vaso-motor functions had toned down or disappeared, *but* only in cases where there had been no evidence of lymphatic lesion. A sympathetically enlarged lymphatic had quite a different significance from a cancerous congeries of glands—the one solitary generally; the other multiple, and matted more or less. This latter, he said, except as a palliation, negatived surgical interference. In mammary amputations, the older surgeons, Syme and others, declined interference when the axilla was involved, except as a palliation, for patients were said to die with less suffering. Dr. Wallace had long taught that in favorable cases the axilla should be opened, and all the glands removed with the lymphatics there, and those running along the major pectoral muscle from the mamma. If the disease had entered the neck and the chest, the mediastinum, the case was hopeless; and he instanced a case where there had been no recurrence in the axilla or the breast cicatrix, where these principles had been carried into practice, but the patient had died from glandular cancer in the mediastinum, which could not be followed up and removed, and at the time of the operation had not been known to be there. The glands of the axilla had been healthy with one exception, of the size of a pea, with distinct cancerous infiltration.

Dr. Wallace drew attention to terrible blunders made in errors of diagnosis, and referred to cases frequently coming under his observation, where both breasts had been condemned to come off; yet the pendulous, nodular, painful organs had arisen from reflex causes, uterine lesions mostly, and at the climacteric, all of which were curable without bringing surgery into contempt. We had no right, he said, to discredit it by hopeless operations, and as little by what

was unnecessary. This had a bearing upon pre-cancerous symptoms. Before such could be accepted by the surgeon as a justification for an operation, a pre-cancerous pathology would have to be evolved, and that we still waited for. Hypertrophic inflammatory changes in the cervix uteri—traumatic and pathological—associated with discharges, sanguineous, purulent, etc., were often mistaken for cancer, and Dr. Wallace stated that he had had many a time to give an adverse opinion on proposed operations—extirpation—for that disease where none such had existed, as had been demonstrated by the subsequent cure by the usual means. He referred to chloride of zinc as an excellent help in many lesions, such as sarcoma, papilloma, and even advanced cancer, and in ameliorating discharges and the offensive smell, checking both and relieving pain.

Mr. Robert Jones thought that the question under discussion could be answered only in one way, and that was, that at present surgery was the only cure for cancer. He thought the operations performed abroad were much more radical and suitable for the occasion than those performed in England, more especially those of Halsted and of Küster. All operations for cancer of the breast, he said, should be devised to anticipate disease in this region, and Stiles's nitric-acid test should always be employed.

Mr. Rushton regarded operations for cancer as essentially experimental and greatly disappointing in too many cases. But he considered it the duty of surgeons to operate in a large proportion of cases, for various reasons. He said that he was not in the habit of undertaking extensive operations for cancerous tumors of small extent, although he carefully cleared the axilla in mammary cancer when the glands were found to be infected. He had given some attention during the last five or six years to partial excision of the breast when affected with small cancerous tumors in the circumference of the gland, with results which had sometimes been satisfactory. He said that he had removed a small cancer from the left breast of a woman fifty-three years old. A second nodule had been excised from the scar four months later, and a third three years after that, and yet the woman was still alive and well, more than seven years after the disease had first manifested itself.

He was not prepared to say, he said, how far such partial operations were to be recommended, but it was clear that in some of his cases they had proved sufficient. He had been much impressed, he said, with the remarkable case mentioned by Mr. Jones, in which the cancer only had been excised twenty years before, and the patient was alive and well at the present time. He stated that he had examined the specimen and had found it to be an undoubted mammary cancer.

Albuminuria as a Result of Vaccination.—Peiper and Schnaase (*Wiener klinische Rundschau*, February 9, 1896) report that in seven instances among a hundred and twenty-two primary vaccinations—*i. e.*, in 5·73 per cent.—they have observed traces of albumin in the urine. In cases of revaccination they have found the occurrence of albuminuria somewhat more frequent; they have observed it ten times in fifty-four cases. They say that there seemed to be no connection between the occurrence of albuminuria and the number of the pocks, and that it does not appear probable that the elevation of temperature had any influence.

Unpleasant Effects of Codeine.—A writer in the *Wiener medizinische Blätter* for February 6th remarks that unpleasant effects of codeine, given in medicinal doses, have not often been reported. They usually consist of dizziness, nausea, vomiting, and the like. He then goes on to say that Dr. Fedor Schmey has recently reported the case of a woman, thirty-four years old, who, eight weeks before, after six years of married life, had been delivered of her first child. When the labor had lasted for twelve hours it had been found necessary to apply the forceps in order to save the child from asphyxia. Since her delivery the woman had complained of severe pains during and after defecation, which she referred principally to a spot in the perinæum a little in front of the anus. After various other means had been tried for her relief, Dr. Schmey prescribed codeine phosphate, a preparation that he had very frequently employed in cases of abdominal pain, and always in maximum doses. In this instance he ordered pills each containing a grain and a half of codeine, of which four were to be taken daily. When he saw the patient again, on the next morning, she had taken three of the pills, and was conscious of their favorable action in mitigating the pain, but at the same time she declared that since she had been taking them she had felt as if she were drunk. If she took one pill, she soon felt dizzy and nauseated. The doctor thereupon modified his original directions, and told her to take only two pills a day. At the end of three days the patient was quite free from pain. She still had dizziness and nausea after taking a pill, but they were not so severe or of such long duration as on the first day. The fact that a person may so rapidly become tolerant of codeine, with the simultaneous abatement of its untoward effects, says the writer, is of particular interest in connection with a case of chronic codeinism lately described by Béhier. The case teaches, he adds, that it is well to use doses smaller than the maximum permitted.

The New York Dental School.—We have been requested to publish the following:

Among the many educational institutions under the supervision of the board of regents and working under the new enactments giving that body educational control is the New York Dental School. The difficulties since its establishment, four years ago, have been those of all young institutions, and arose out of a misunderstanding of the powers of the board of regents and a somewhat erroneous conception of the requirements of that body, but with the ultimate intent of following closely the lines laid down by the superior body, the University of the State of New York. This school received its charter from the regents in 1892, at the same time and under the same provisions as those granted to the Teachers' College.

It was deemed advisable during the summer of 1895 to reorganize the faculty and to bring the school into closer relations with the board of regents and in touch with the great national bodies morally controlling the ethics of the profession. During the present scholastic year this has been the aim, and its achievements have already shown with what success. The faculty is now composed of a body of young men already well known in their different fields of work, and is working with an honest purpose to further the interests of dental education and to place dentistry upon its proper plane in relation to medicine. It appreciates dentistry as a department of medicine, and that the preliminary requirements as marked out by the board of regents for both medicine and dentistry are most conducive to the better understanding of the subjects taught. The curriculum of a dental college today comprises nearly all that is required of the medical student, covering as it does the fields of biology, bacteriology, histology, chemistry, oral and facial surgery, and other branches required in any school of like character.

There is no question but that the effort of the regents is in the right direction, and they will undoubtedly place

medical and dental schools on a higher basis of professional training. It is urged by the opponents of these measures that students will be driven into other States. This in a certain way may be so, but this is desirable if it drives those of too little ambition or courage to properly fit themselves for fields of so much importance to others in which the requirements are not so stringent. It will certainly retain the best element and bring students from other States who desire the best training for their life work. The organization to this end is now complete, it remaining only to perfect the system to embrace special departments of work. This is being rapidly done, and the promised curriculum will, if fulfilled, be an honor to those having the work in charge.

Thyreoid Extract in the Treatment of Myxœdema.—In the *British Medical Journal* for February 8th there is an article on this subject by Mr. George R. Murray, who remarks that, when thyreoid extract was first suggested by him as a remedy for myxœdema, two important questions were raised: 1. Can myxœdema be completely cured? 2. Will not the disease ultimately return, even if the use of the remedy is continued?

In answer to these questions, he says, evidence will be brought forward to show that myxœdema can be cured, and that it does not return when the use of the remedy is continued. It is necessary, however, to be quite clear as to terms. Myxœdema is a symptom or combination of symptoms of loss of the function of the thyreoid gland. In the idiopathic form it is a symptom of chronic interstitial thyreoiditis, just as anasarca may be a symptom of renal disease or ascites of hepatic disease. The myxœdema can be cured, although the chronic interstitial thyreoiditis still remains. As myxœdema is thus a symptom of thyreoid inadequacy, it occurs not only as a result of removal or of fibrosis of the thyreoid gland, but also in rare cases in consequence of other diseased conditions of the gland.

In illustration of this, says Mr. Murray, two interesting cases which have been observed by Köhler may be mentioned. In one the myxœdema developed in consequence of syphilitic disease of the thyreoid gland, and as this improved under treatment by potassium iodide the myxœdema disappeared. In the other the myxœdema occurred as a result of actinomycosis which affected part of the thyreoid gland. Great improvement in the myxœdema followed the removal of the infected tissues by surgical measures.

In myxœdema which accompanies fibrosis of the thyreoid gland, we can not restore the gland to its normal condition, but we can restore the patient to health if no incurable complication has arisen. For example, says the author, a gentleman, aged forty-four years, who had suffered from myxœdema for about two years and a half, was sent to him three years ago. At that time he suffered from well-marked myxœdema. He could scarcely walk half a mile, and could undertake no work. Under treatment with thyreoid extract, rapid improvement took place, so that in six weeks the myxœdema had almost entirely disappeared. Five months later he wrote to say that he was quite cured. So complete has been the recovery of his mental and bodily capabilities that a year and a half ago he was able to undertake the duties of secretary to a large manufacturing company, and not long afterward he was able to ascend a mountain over three thousand feet high, with a walk of ten miles, without feeling much fatigue. A daily dose of ten minims of thyreoid extract is sufficient to keep him in good health.

In order to show that patients remain free from myxœdema as long as they take thyreoid extract and without any increase in the dose, the author refers to the first case in which the treatment was adopted. This patient, he says, was a woman, aged forty-six years, who had suffered from myxœdema for four or five years. There were well-marked swelling of the face, of the hands, and of the feet; dry skin, without perspiration; loss of hair; subnormal temperature; languor; and slowness of speech and action. It is now four years and a quarter since the treatment was first begun, in April, 1891. She gradually lost all the symptoms of myxœdema, which, however, partly returned on two occasions when the use of the remedy was discontinued for a time. She has for a long time been free from myxœdema, and is so now. The swelling has gone, and the skin is soft and moist; the hair has grown again, the temperature is normal, and she leads an active life as the wife of a workingman. She continues to take a drachm of thyreoid extract during each week. As this patient remains well at the end of more than four years, it is evident that as long as she continues to take the extract she will not have myxœdema, even if she lives for twenty years more. This continuance of good health in the adult, says Mr. Murray, gives us all the more reason to expect that cretins, if treated early and continuously, will also grow up and develop into normal adults. It will, of course, he says, take years to prove this, but he has brought forward these observations, as they help to show that in cretinism it is well worth while to persevere with the treatment year by year with this object in view.

A Subdiaphragmatic Abscess Simulating Empyema.—Such a case forms the subject of an article by Dr. F. Tilden Brown, to appear in the forthcoming *Report of the Presbyterian Hospital*, of which an advance proof-sheet has kindly been sent to us. The patient was a woman, twenty-nine years old, a native of Ireland, who had been married for five years. She was admitted on June 9, 1893. Two years before she had been delivered of a dead child after protracted and instrumental labor. A year later she had begun to have pain in the left inguinal region. This pain had continued for seven months, when complete obstruction from fæcal impaction had made her critically ill. Being relieved, she had subsequently kept herself free from abdominal pain by using small daily doses of castor oil. She entered the hospital for the repair of a lacerated cervix and perinæum. Perinæorrhaphy and trachelorrhaphy were performed on the 11th. On the 19th she complained of pain in the right umbilical region. On the 21st her temperature rose suddenly to 103·6°; pulse, 120; respiration, 20. Free catharsis and quinine effected a temporary fall of temperature. On the 26th the temperature was still between 103° and 104° every afternoon, and she had pain in the left lumbar region. She vomited frequently and looked sick. Nothing was found on examination. On the 30th it was noted that for the last few days her temperature had not been over 100°, but pain in the left side continued. She vomited at times. On July 7th she complained of pain in the abdomen, was restless, vomited, had diarrhœa, and again had a high afternoon temperature. Lavage of the colon was given. On the 20th she continued to have afternoon fever, followed by profuse sweating, and had been delirious the night before. Pain in the left side was complained of. On the 21st an aspirating needle was introduced in the eighth intercostal space, above and behind the angle of the left scapula, and a yellowish fluid withdrawn. Examination showed it to be pus, and by culture a pure growth of colon bacillus was obtained. On the 25th she had a large and painful double parotiditis. On the 29th it was noted that until then the patient and her family had declined an operation. She was now in a critical

condition. Under ether anæsthesia aspiration was practised in the eighth intercostal space, in the mid-axillary line, and pus drawn. An incision was made upon the seventh rib, and an inch and a half of the bone was excised. There was no bulging forward of the parietal pleura. On making an incision through the tissue which presented, which looked rather more like muscle than compressed lung, the subdiaphragmatic abscess was for the first time suspected. Through the completed incision the finger could touch the concavity of the diaphragm above, and on evacuation of a large quantity of offensive pus and broken-down tissue the apex beat could be reached on the inner side, and what appeared to be disintegrated spleen toward the lower side of the wound. Hot douching brought away much additional *débris*. Generous drainage with tubes and gauze was employed. The wound was covered with the usual dressings. The patient rallied but little, despite stimulation and saline infusion, and died at noon on the following day.

At the autopsy, nine hours after death, the left lung, at the base, was found hyperæmic and adherent to the diaphragm; otherwise both lungs and pleuræ, also the heart, were normal. The stomach at its cardiac end had a hard, finger-sized, white fibrous adhesion connecting with the upper part of the spleen. On the mucous surface of the stomach, opposite the adhesion, there was no gross evidence of any former perforation or ulcer. The spleen was of three times its normal size and nearly separated into two equal parts by a large necrotic infarct, the base of which was at the convexity of the organ. The upper half of the spleen was drawn toward the stomach by the fibrous band, and occupied a position at right angles to the normal axis. Firm adhesions connected the splenic halves to all surrounding parts except the diaphragm above. The peritoneal cavity was thus protected. Both kidneys had numerous small white infarcts. On the posterior lower surface of the uterus there was a fibroid of the size of a duck's egg. The tissues of the perinæum and cervix uteri appeared normal, and the process of repair seemed perfect. There was no gross evidence to intimate that infection had occurred in connection with the operation.

The history of fæcal impaction, says Dr. Brown, was explained at the autopsy by the presence of a uterine fibroid indirectly invading the lumen of the rectum. The suspicion of subdiaphragmatic abscess should have occurred when the first pus drawn by aspiration yielded only a culture of *Bacillus coli communis*, added to the fact that there had been no pre-existing pulmonary history, although the physical signs corresponded to and naturally suggested empyema. The occurrence of double symptomatic parotiditis should also have aided to attract attention to the probability of a process involving the peritonæum rather than the pleura. Meltzer, in his paper on subphrenic abscess, says Dr. Brown, refers to the error apt to ensue from placing too great reliance upon physical signs, and cites in evidence Wintrich's mistaking a subdiaphragmatic abscess containing air for a pyopneumothorax, and yet he does not wholly agree with Leyden, who maintains that the ætiology and history of the existing sickness is the only means of diagnosticating a subphrenic abscess from an empyema or pyopneumothorax, for in two of the cases which he (Meltzer) has had himself such a dependence for diagnostic purposes would have proved deceptive where subphrenic abscess existed, and yet the primary cause was located in the cavity above the diaphragm in both cases. Moreover, he believes he has demonstrated that there are cases of intrapleural effusion with an exclusive and pronounced abdominal history. Penrose and Dickinson have reported ten cases of subdiaphragmatic abscess, in all of which a gastric perforation was found at the autopsy. In another case there was no perforation, but a cicatrized ulcer, where the cicatrization had apparently taken place subsequently to the formation of the abscess. In my case, says Dr. Brown, it is rational to presume that the same conditions pertained, and that the compact fibrous band uniting the stomach and spleen was a former walled-in fistula leading from a gastric perforation to the seat of the abscess. Whether the prostrating attacks of abdominal pain experienced by the patient three months before entering the hospital were due to obstructive intestinal colic or to a gastric ulcer and localized peritonitis can only be relatively inferred. At all events, the operation on the cervix and perinæum appears not to have had any connection with the fatal septic processes afterward manifested. The case affords an opportunity to emphasize what may prove to be of value in the diagnosis between subdiaphragmatic abscess and empyema—namely, when pus which is aspirated from a region common to both affections yields on culture a pure or mixed growth of *Bacillus coli communis* there is a strong probability that the point of suppuration is situated below the diaphragm.

The Transmission of Microbian Diseases by Books.—The *Presse médicale* for February 1st contains an abstract of an article on this subject by M. Du Cazal and M. Catrin which was published in the *Annales de l'Institut Pasteur*, 1895, No. 12. This, says the writer, is an hygienic question which demands our best attention. A more exact knowledge of the nature of diseases at the present time makes it the duty of the physician to explain their ætiology and to call the attention of the authorities to the defects in official reports. This, he says, is what the authors have done in regard to this special mode of contagion.

In regard to the question as to whether books contained microbes or not, particularly pathogenic microbes, the authors made some experiments with different parts of new books or with old ones that had been in use in the hospitals. The first series of experiments showed that new books were not aseptic, although they did not contain the pathogenic microbes which were found in the old books.

The second series of experiments related to the transmission of diseases by books, and to the different pathogenic agents, such as the streptococcus, the pneumococcus, and the bacilli of diphtheria, of typhus, and of tuberculosis. The results were positive in regard to the first three varieties, and negative as to the others, particularly with Koch's bacillus, as it had been impossible to transmit tuberculosis to animals with the paper, however charged it had been with this bacillus.

The authors had followed these experiments with investigations concerning the easy and complete disinfection of books, as their destruction by fire was such a radical procedure that it could not be resorted to, except in cases of absolute necessity or when other means failed.

Disinfection by means of the autoclave is perfect so far as the destruction of the microbes is concerned, but it spoils the bindings of books; those, however, that are only loosely bound, without covers, do not show any trace of the process of disinfection.

This excellent work, says the writer, establishes experimentally the reality of contagion by transmission from books, and the possibility of suppressing the danger.

Surgical Shock and its Treatment.—An interesting paper on Multiple Synchronous Amputations, by Dr. W. L. Estes, of Bethlehem, Pennsylvania, was read, by invitation, before the New York State Association of Railway Surgeons, at its fifth

annual meeting. We are indebted to the *International Journal of Surgery* for advance proofs, from which we reprint the following:

"I have long held the belief that surgical shock is of two kinds, or composed of two elements—the one immediate and frequently antecedent to the injury, the other secondary and subsequent. The immediate or antecedent shock is *psychical*, and may occur when there is absolutely no somatic injury; the secondary and subsequent shock is the one with which the surgeon usually has to contend, and this is due to hæmorrhage. So that if hæmorrhage is prevented or stopped before the patient has lost any large quantity of blood, there will be comparatively little shock. I think it has been abundantly proved that immediate amputation offers the best chance of recovery after serious injuries; it is, usually, so-called shock which prevents early operations. If, therefore, hæmorrhage is prevented and no great shock occurs, the operation may be done immediately and the chances of recovery are markedly improved. It seems to me the appreciation of this point in practice has greatly reduced the mortality after multiple operations. Another point of great importance is, I think, that surgeons are better physiologists and therapeutists than they formerly were. This is simply in line with the general advance in the whole science (I do not say art) of medicine. The indications for stimulation and measures for resuscitation, generally, are much better understood than formerly. So that if one has to combat shock, he goes about it much more rationally than in former years. Instead of hastening through an immediate amputation, careful control of hæmorrhage by an Esmarch tourniquet, careful antisepsis of the wound and surrounding parts are practised, and during a sufficient interval saline infusions, hot saline enemata, strychnine, and digitalis are given, and when the blood-vessels are again filled and the heart's action has recovered some of its tone and strength by careful hæmostasis, the operations may be done and in the majority of cases safely done.

"There are two frequently employed measures of resuscitation, one of which, in my hands, has not been very satisfactory, and the other, I believe, injurious, I should like to discuss more fully. My allotted time will permit little more than bare mention, however. I refer to saline intravenous infusion and the use of alcohol or ether as a stimulant. Theoretically, the intravenous injection of a so-called 'normal' saline solution would appear the readiest and best method of restoring a circulating medium after severe hæmorrhage. In the hands of other operators it has had brilliant effects and done great good. Though I have resorted to the measure in many instances, the good effect has appeared to me very evanescent and disappointing. I have, by the use of these injections, restored radial pulses which were entirely inappreciable, brought back some color to prolabia and to the surface generally, but the result was very transitory and seemed very soon to lose its efficiency, and I have been repeatedly disappointed by losing my patient after using the injections. The use of saline injections into the rectum has proved much more satisfactory in my practice, and I employ them very frequently. As is well known, saline solutions (even albuminous solutions highly salted) are readily absorbed from the rectum, and the introduction into the mesenteric and portal circulation, though indirectly, of this hot solution I have found a much more permanent method of stimulating a failing general circulation.

"The use of alcohol as a stimulant in shock has seemed harmful in so many instances that I have quite abandoned it. As a vaso-motor paralyzer, it encourages hæmorrhage and oozing; it is apt to increase restlessness, and when given in large doses it weakens the heart through its paralyzing effect on the nerves. The effect of ether is similar to that of alcohol, and when it is used hypodermically it intensifies the weakening effect of its anæsthetic action if an operation is to be done or has been performed.

"Strychnine is now my 'sheet anchor' in cases of great weakness after severe injuries. If an anæsthetic is to be or has been used, especially if chloroform is the anæsthetic selected, I use digitalis as well as strychnine. I give as much as one eighth grain of strychnine sulphate hypodermically in the course of three or four hours, when there is urgent need of stimulating the heart. I have never observed any ill effects from this large quantity. Beginning, usually, with one sixtieth of a grain, the injections are repeated sometimes two or three times in the course of an operation lasting forty or fifty minutes, and continued after the patient has been put to bed, at longer intervals of course, together with the use of digitalis and rectal injections of hot saline solution. A number of patients, apparently moribund when received, have reacted and recovered under this treatment.

"Following shock, according to the ordinary teaching, one must expect hæmorrhage in these cases of severe multiple injuries. It is true, in my opinion, that after the psychical shock, which always acts as a powerful vaso-motor irritant, as well as a paralyzer of the nerves of the heart, there results a paresis of the vaso-motor nerves, and as the effect of the first shock wears off, which is apt to occur either in a few minutes or in an hour or more, the open and paralyzed vessels pour out a steady stream of blood if not controlled. Fortunately, in the crushing injuries which usually require multiple operations, the vessels are also divided by tearing rather than by incision, and the elongation and pressure at the same time which mechanically sever the continuity of the vessels, as well as the other soft tissues, result in partially closing the vessels by attenuation of the lumen and the curling up of the inner and middle coats of the arteries, so that the free flow of blood is obstructed and hæmorrhage is slow, though persistent, as a rule. Laymen have been so generally indoctrinated into the elements of controlling hæmorrhage, and appliances for doing this are in so many railroads and establishments freely furnished and kept at hand, that nowadays a man is not nearly so apt to bleed to death as formerly, and it is very rare for an injured man not to receive some appliance for the control of hæmorrhage very soon after the accident.

"Besides the ready assistance for the control of hæmorrhage, another powerful factor in saving life after multiple injuries—as was said before—is the abundance of hospitals along lines of transportation, and skilled surgeons to give aid. Instead of transporting the injured man for miles and miles to a city hospital, or, worse, attempting with bad surroundings and wretched appliances and assistants to do the necessary amputations along the wayside or at the home of the patient, it rarely happens that in the regions where railroad centres and factories and mines abound that the injured man can not be taken in a short time to a fairly well equipped hospital where he will receive skilled attention and modern treatment. The later statistics of amputation mortality rates furnish strong arguments for the multiplication of small hospitals. I am afraid the tendency at present is to overdo this charity, but, properly distributed and regulated, there can be no question of their great good and most efficient lowering of the death-rate after injuries.

"As stated before, if the patient is in a condition to bear the operation, the best time to operate is immediately. Very frequently, however, the patient is not in a condition to bear the operation. In my judgment, it is very unwise to attempt

multiple amputations, or, indeed, any major operation, if the patient is very weak, immediately upon his reception by the surgeon. With the appliances for disinfection, dressing, and hæmostasis which every ordinarily equipped surgeon has always at hand, the operation may be deferred for a period of hours without danger of serious infection. The limit of this period must always be the very beginning of so-called inflammatory reaction in the crushed members. It is far less dangerous to operate in three or four hours, even if the patient is alarmingly weak, than to wait until infection has taken place and an interstitial phlegmonous inflammation has been established. I am convinced there can be no rules laid down to guide a surgeon in determining, in any given case, whether a patient is too weak or not for multiple amputation. One must judge the *individual* in every case as well as the indications of physical signs, etc. Physique, physiognomy, age, as well as the general condition of the patient, are all important factors in the problem. I most strenuously deprecate the doctrine that in very marked conditions of shock an improvement is to be expected when the patient has been anæsthetized. That this *does* happen in many cases is true enough, but it is only in the cases of psychical shock and not in cases of acute anæmia. It is a very unsafe rule to follow, therefore, and not to be depended upon. If some time has supervened since the injury, and the patient has not been made extremely anxious by irregular or careless transportation, frightened, in other words, in my experience conditions of weakness are simply made worse by anæsthesia.

"The method and manner of anæsthetizing are also important matters. Both of the commonly used general anæsthetics, ether and chloroform, I have found weakening. To reduce this effect to a minimum, it is important to employ small doses and to continue the inhalation as short a time as practicable. In order to facilitate this I have found morphine, given in a moderate dose hypodermically, ten minutes before the anæsthesia is begun, to be a very reliable and valuable agent; it materially assists in the anæsthesia and markedly lessens the quantity of the anæsthetic required. The manner of giving the anæsthetic is also important. Forcing and smothering ought to be sedulously avoided. Whatever cone is used, it should be borne in mind that in these weak conditions a liberal admixture of air is necessary. The degree of anæsthesia should never be profound, but simply to the stage of loss of reflex and partial relaxation. The anæsthetic should be entirely discontinued as soon as the suturing of the stump is begun. Usually with the use of morphine the state of anæsthesia continues long enough for the operator to comfortably place and tie his sutures."

The Treatment of Sciatica by Compression.—In an abstract of an article from the *Bulletin médical de Paris* for January 22, 1896, which is published in the *Lyon médical* for February 2d, the writer states that M. Negro has reported a hundred and thirteen cases of rebellious sciatica in which this new treatment had resulted in recovery. The procedure is as follows: The patient lies on his face with his legs extended and resting easily one against the other. The most painful spot is selected, the region where the nerve proceeds from the large sciatic opening. On its trunk both thumbs are applied and it is compressed with the greatest possible force; at the same time slight lateral movements are made without changing the point of pressure or moderating its intensity. This takes from fifteen to twenty seconds, and is followed by an interval of twenty minutes' rest, when the procedure is repeated. After a second application, which is much less painful than the first, the patient is able to walk, and for several hours, or even a day, he may be free from pain.

In order to obtain complete recovery, says the author, this procedure should be practised about six times a day every two days, until the definitive suppression of the neuralgia is obtained.

The Treatment of Vulvar Pruritus.—The *Gazette de gynécologie* for February 1st contains an abstract of an article which was published in the *Concours médical*, in which M. Morain advises the following course of treatment: When vulvar pruritus is symptomatic the cause should be combated at once, whether it is a gynæcological affection, diabetes, or disturbances of nutrition in arthritic persons. Alcoholic drinks, spices, game, fish, shellfish, and coffee should be forbidden; and alkaline drinks, prolonged bathings, frequent laxatives, and the employment of arsenic may be recommended. At the same time a local treatment should be instituted which should be much the same as that which is advisable for idiopathic pruritis.

Vulvar lotions should be given night and morning of very hot water to which one per cent. of chloral, coal tar, or aromatic vinegar has been added. In addition to this, the affected region should be painted with the following solution:

Cocaine hydrochloride	15 grains;
Distilled water	150 "

M. Morain also makes use of the following ointments:

1.	Menthol	45 grains;
	Olive oil	15 "
	Lanolin	90 "
2.	Potassium bromide, Salicylic acid, each	15 grains;
	Glycerole of starch	300 "
	Calomel	6 "
	Extract of belladonna	3 "

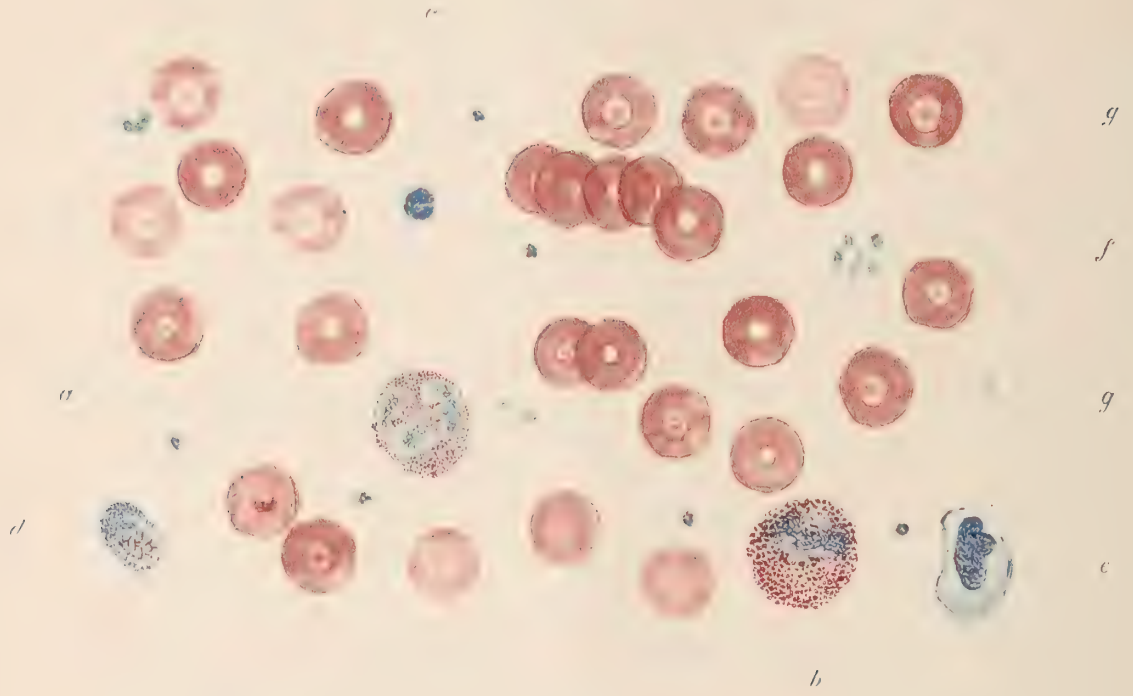
He also recommends the following solution, which is to be used as a lotion:

Mercury bichloride	30 grains;
Alcohol	150 "
Rose water	600 "
Distilled water	14 ounces.

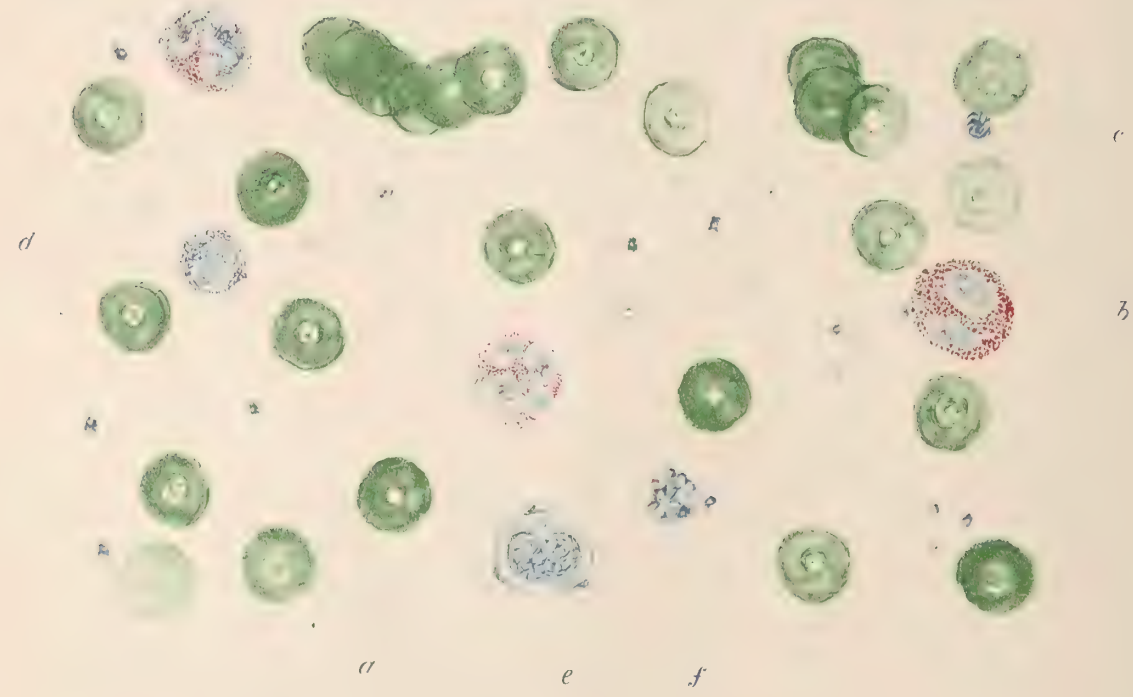
If these remedies fail, says M. Morain, electricity, either the continued or the interrupted current, should be tried. In particularly rebellious cases, when the itching resists all kinds of treatment, resection of the tissues of the affected parts should be resorted to.

Massage in the Treatment of Sprains and Bruises.—The *Revue internationale de médecine et de chirurgie* for January 25th contains an abstract of a paper which was read by Dr. Krafft, of Lausanne, before the *Société médicale de la Suisse romande*. Dr. Krafft, says the writer, reported a hundred and three cases in which he had employed this treatment with excellent results. He stated that a careful toilet should be made of the region to be treated, and that the hands should be rubbed with a one-per-cent. solution of corrosive sublimate in glycerin, so that they may slip easily over the skin and thus prevent irritation. Before beginning massage a cold douche should be applied locally; afterward prolonged *effleurage* is begun and continued by simple friction, which is made more energetic when following the course of the blood. Other manipulations, he said, such as kneading, were completely useless in cases of recent accidents. After massage, active and passive movements may be made. By this simple procedure, said Dr. Krafft, very satisfactory results might be obtained.

A.



B



DR. BREMER'S ARTICLE ON AN IMPROVED METHOD OF DIAGNOSTICATING DIABETES FROM A DROP OF BLOOD.

Original Communications.

AN IMPROVED METHOD OF DIAGNOSTICATING DIABETES FROM A DROP OF BLOOD.

BY L. BREMER, M. D.,
ST. LOUIS.

IN two previous articles (*Centralblatt f. d. med. Wissensch.*, 1894, No. 49, and Philadelphia *Medical News*, February 9, 1895) I have described a method enabling one to diagnosticate diabetes by the blood. The typical and practical feature of this process is that a drop taken from the tip of the finger in the usual manner by means of a needle permits of an unfailing diagnosis. I have, since publishing the article mentioned, continued my studies, and base the conclusions which I am going to give below on about fifty cases. These comprise both genuine diabetes as well as cases of glycosuria. The test mentioned above has been employed only by a few observers that I know of. Some have communicated with me, and the impression I have gathered from their letters is that its execution is a rather tedious and irksome one, even to the patient microscopist. The difficulty of successfully repeating the experiment lies in the complicated process requisite to the preparation of the staining fluid. This difficulty is enhanced by the fact that the two aniline dyes employed for the test—eosin and methylene blue—vary considerably according to their source. The acidity of the former and the alkalinity of the latter are met with in shifting proportions in the different articles furnished by different manufacturers. Again, the process of preparing the blood specimens by means of prolonged heating has proved objectionable to many who otherwise would resort to this test. This process consists in subjecting the dried blood specimen (cover-glass preparation) to a heat of 125° to 130° C. for two hours. This is time-consuming work requiring proper apparatus. The copper strip or copper plate ordinarily used is unreliable. The danger of overheating the specimens is very considerable. In this event the test will be negative or doubtful. For these reasons I have tried to simplify the method, and now I am able to announce that I have succeeded in devising a quick and practical process by means of which diabetes can be demonstrated almost as readily by a drop of blood obtained from the tip of the finger by the prick of a needle as it can be done by the urine tests ordinarily employed. Not only is my method nearly as quick as the chemic urinary test or polariscopic one, but it is, I believe, more reliable. Another improvement on the original method is that the microscope is rendered superfluous. Naked-eye inspection is sufficient to make the diagnosis.

It is a well-known fact that by means of dieting and by the administration of certain drugs (antipyrine, for instance, calomel, and ammonium carbonate) the sugar can be made to temporarily greatly diminish or entirely disappear from the urine, even in cases of well-established and undoubted diabetes. Fasting is a tolerably certain means of freeing the urine from sugar. But even in such cases, where the urine test is negative chemically and by the polariscope, my method reveals the diabetic, as I have demonstrated in several instances. The importance of such a test from a clinical point of view, as from that of examinations for life insurance, is obvious. I know from my own observation that diabetics are not infrequently accepted by life-insurance companies as good risks. The so-called danger line of specific gravity, 1·030, is delusive. There are diabetics whose urine is, at times at least, of normal specific gravity.

Diabetes is a much commoner disease than is generally assumed by the profession and the laity. There can, furthermore, be no doubt as to the constant increase of diabetic patients, a fact that has been justly attributed to the increased strain which modern civilized man is subjected to. It is therefore of importance to have a means of diagnosticating incipient, or threatening, or doubtful diabetes. This, I maintain, can be done from a drop of blood, which, unlike urine, is always obtainable.

The component parts of the reagent are eosin and methylene blue. Saturated watery solutions of these dyes are mixed in about equal proportions, so that a neutral point is obtained; a precipitate forms which is insoluble in water but soluble in alcohol. This precipitate is washed and dried on a filter and reduced to a fine powder. To it are added eosin and methylene blue in small quantities. The amount of each varies according to the respective degrees of acidity and alkalinity of the dyes. Owing to the variability and unreliability in this respect (there are at least four different kinds of eosin to my knowledge), the quantities have to be ascertained by practically and experimentally testing specimens of diabetic and non-diabetic blood. I will state that of the samples I had at my disposal, one twenty-fourth of eosin and one sixth of methylene blue was added to the neutral (dried) compound. This yields a powder of a reddish brown color.

The manner of procedure to make the test is as follows: The drop of blood is procured by quickly pricking the fourth finger of the right hand of the person under examination. The drop is spread either in the usual manner, being placed between two cover glasses, which are withdrawn from each other by means of the fingers or the forceps, taking care to obtain a film of equal thickness (which sometimes is hard to do); or the drop is placed near one of the edges of the square cover slip, held with the left hand, while with another cover slip, held with the right at an angle of about forty-five degrees, the drop is gently spread and then allowed to dry. It is now, for the sake of comparison, placed together with a cover-glass slip preparation of non-diabetic blood in a wide-mouthed bottle or glass jar, such as is usually employed for portable galvanic batteries, containing equal parts of alcohol and ether, say about eight or ten grammes of each. This jar is then placed in hot water contained, say, in a tin cup, where the ether-alcohol is allowed to boil for four minutes. The boiling point is about 60° C. This is done for the purpose

of fixing the hæmoglobin in the red blood-corpuscles. The cover slips thus prepared are now transferred to the test fluid prepared by dissolving about 0·025 to 0·05 of the powder in about ten grammes of thirty-three per cent. of alcohol.*

I must, however, call attention to the fact that this solution retains its characteristic staining qualities only for a few hours, and that for every examination a freshly made solution should be employed. In this fluid the cover slips remain for about four minutes. They are then washed in water, after which it will be found that the diabetic or glycosuric blood film presents a sap or sometimes a bluish-green color, whereas the non-diabetic blood preparation looks reddish-violet.

The contrast is very striking, and is as plain as that which exists between diabetic and non-diabetic urine treated after the usual method, say with Nylander's solution.

This specific reaction I have obtained in about fifty cases of diabetic and glycosuric blood. (Herein are included, however, the cases examined with the method previously published.) Usually the blood test was resorted to first and was followed up, viz., verified, by the urine test. Even in such cases where there is only a trace of sugar demonstrable in the urine—for instance, where a slight black precipitate is noticeable with Nylander's solution only after settling on standing for some time—the test is positive. Lastly, there is a class of persons who are not only predisposed to diabetes, but dwell actually on the borderland of this disease, crossing and recrossing the border line. They do not habitually show sugar in the urine. These individuals I call "sugar liners," in analogy with the term "border liners." This "diabetic border liner" or suspect can also be told by my method. Nothing, however, is easier than to pick the diabetic out of any number of persons, well or sick with any other sort of ailment, by means of my method.

The peculiar reaction described consists in the selective affinity of a certain substance occurring in red blood-corpuscles of diabetic patients for another substance contained in the color reagent; possibly a specific principle or substance in the diabetic red blood-corpuscles forms a new chemical compound with one of the staining principles contained in the eosin-methylene-blue solution. At all events, the red blood-corpuscles of diabetic or glycosuric blood are stained green, whereas those of non-diabetic blood present a purple or madder color. There is no differential staining of the blood plasma, except in so far as the exuded fluid from the red blood-corpuscles resulting from the drying process is concerned. The test proves that there must be a substance other than grape sugar on which the characteristic stain depends; for a cover glass smeared with non-diabetic, say healthy blood, when prepared in the usual manner and treated with a solution of grape sugar, does not yield the diabetes reaction on the application of the reagent, nor will the blood of an animal, say a rabbit, that has received two grammes of grape sugar subcutaneously yield the specific reaction within one or two hours after the injection. But the specific reaction is obtained by floating a cover-glass slip with a film of non-diabetic blood on diabetic urine for about ten or fifteen minutes. Here the stain is, too, the characteristic green color. In this case, then, a substance contained in the red blood-corpuscles, perhaps the hæmoglobin, absorbs and incorporates, possibly combines with, the substance that occurs in the urine of diabetes, determining the same chemic reaction as we see in diabetic blood. By treating, then, normal blood with diabetic urine the former can be rendered diabetic so far as the typical color reaction is concerned. Whether this substance is directly toxic or only is instrumental in interfering with oxidation is a question. It is reasonable to infer that the latter is a well-grounded conclusion, being a foreign substance lodged in the oxygen-carriers.

I may state further that I have experimented with all kinds of diabetes and glycosuria, so far as the probable or supposed origin was concerned. The results have been uniform whether the disease was one of the hepatogenous, hæmatogenous, neurogenous and psychogenous, traumatogenous, pancreatic, or toxic varieties. In all of them the reaction will infallibly be obtained.

I would in particular call attention to artificial or experimental diabetes produced by the administration of phloroglucin to an animal. Of late I have experimented with rats. The phloroglucin rats show the typical reaction, both as to blood and urine. In rats, however, treated with phlorrhizin the specific blood reaction is absent, although the urine shows a sugar reaction with Nylander's solution. The action, therefore, of phloroglucin on the organism is totally different from that of phlorrhizin. (I did not repeat the experiment of floating specimens of non-diabetic blood on the urine of phlorrhizin animals.) Whereas the former seems to give rise to all the metabolic abnormities of the blood met with in genuine diabetes, including the white, unstainable, necrotic (?) corpuscles described in my former articles, there is an absence of that peculiar substance in the erythrocytes which gives the characteristic color reaction with the test dyes. This substance is not grape sugar, as remarked before.

Another point of interest is that the lower vertebrates are susceptible of toxic diabetes, as has been demonstrated by other observers. At all events the chicken is. A chicken cock was given phloroglucin, and the diabetes reaction of the erythrocytes could be demonstrated after three days. Unfortunately, I had no frogs at my disposal, and had therefore no opportunity of ascertaining the positive or negative reaction on a still lower rung of the scale of evolution.

Again, it is perhaps not unimportant to state that the blood of the chicken embryo, taken on the fourth and fifth day of incubation, shows the same color reaction of the discoplasm as diabetes blood. I refrain from drawing conclusions and advancing theories.

Among the patients whose blood I have examined, the diagnosis of diabetes (and glycosuria) was generally made

* Alcohol of higher grade gives rise to the formation of a great number of small air bubbles formed between the erythrocytes and the plane of the cover glass, and in the protoplasm of the blood-corpuscles, thus interfering with the study of the corpuscles under the microscope.

by the blood test first, then verified by chemical and polaricopic examinations. Sometimes, when the latter did not reveal any sugar in the urine, owing to the small percentage, the blood would tell the tale, larger and more appreciable quantities being found on successive trials. This would in a measure explain the observation that the degree of gravity of diabetes is often independent of the amount of sugar found in the urine. The sugar may disappear from the urine, but the toxic state of the blood persists.

I have not succeeded yet in diagnosticating diabetes from glycosuria. Possibly this can be done by perfecting the blood-testing methods. I have no doubt that there are other, perhaps simpler, aniline stains than those which I have described. The Ehrlich-Biondy stain, for instance, imparts a light yellow color to diabetic erythrocytes in contradistinction to the brownish-yellow of the non-diabetic blood. With this reagent, too, a naked-eye diagnosis could be made with a little practice, but the contrast is not so striking as that obtained with the reagent described above.

There is one point which I should like to call particular attention to in order to prevent misinterpretation. Non-diabetic blood when spread in an uneven manner, so that ridges or excessively thick layers are formed, may also show a greenish tint. Again, the blood film that is not sufficiently hardened either by the ether-alcohol or by heat may give doubtful results. Lastly, the dichroism of the erythrocytes must be taken into consideration—*i. e.*, the fact that blood spread on glass appears red on reflected and greenish on transmitted light. But if these sources of possible error are avoided the test is absolute.

Chloral or chloralamid glycosuria is not comprised in my experiments, nor is experimental curare diabetes.

The method described has the disadvantage that minute crystals, which, during the staining process, are precipitated on the specimen, mar the latter somewhat for microscopic examinations. It seems that a *status nascendi* for the newly forming compound of eosin and methylene blue is indispensable to the reaction. Solutions kept in ordinary alcohol lose the quality of the differential stain. Hence the injunction to prepare a fresh solution for every test to be made. The older the test solution is the more uniform —*i. e.*, the less differentiated—is the color of blood specimens of diabetic and non-diabetic blood. Both assume a bluish tint. In order to obtain the finer histologic features of the blood, diabetic or non-diabetic, especially the differential staining of the nuclei and the granulations of the white blood-corpuscles, ten minutes' staining is requisite.

The chief results of my investigations of the blood in diabetes, both clinical and experimental, briefly stated, are:

1. The diagnosis of diabetes from a drop of blood can be made with as great a certainty, perhaps with a greater one, and almost as quickly, as by the urine tests.

2. There is a substance, at present unknown, which occurs in the diabetic red blood-corpuscles, foreign to these bodies in the physiological state, which causes the specific reaction with the eosin-methylene-blue compound described. In no other condition of the blood is this substance (or combination) met with than in diabetes and glycosuria. The only exception I have met with so far is in embryonic chicken blood.

3. It is not the presence or excess of sugar in the blood which causes the clinical symptoms of diabetes, but it is with greater probability the foreign element alluded to, which is probably combined with the hæmoglobin, in conjunction with the white (necrotic) masses resulting from the decay of the corpuscular elements of diabetic blood, that makes the clinical symptoms and is possibly the anatomo-pathological substratum of the disease.

Postscript.—The results of the blood-tests detailed above had been so uniform that I was firmly of the opinion that in every case where sugar could be demonstrated in the urine the characteristic blood-reaction could be obtained. In one case, however, the test has been negative, although it is clearly one of diabetes, showing 6·5 per cent. of sugar. It is the case of a boy, sixteen years old, who, at the age of fourteen, became diabetic in consequence, as he alleged, of an electric shock. I shall describe this case in detail. A cover-glass preparation of normal blood floated on the urine of this patient did not show the characteristic green color. Since the blood-reaction was normal, I take it to be analogous to phlorrhizin or essential kidney diabetes. There are, then, at least two distinct kinds of diabetes that can be diagnosticated by the blood-test—hæmatogenous (broadly stated) and renal diabetes. The recent experiments of an Italian observer with oxygen on diabetics would practically bear out the conclusions arrived at by me—that, with rare exceptions, diabetes is a disease of the red blood-corpuscles. It seems reasonable to infer that an abundant supply of oxygen—for instance, inhalation of oxygen—will benefit those patients in whom the oxygen-carriers are hampered in their function.

Description of Plates A and B.

The plates represent cover-glass preparations, of A (with madder-colored erythrocytes), normal, B (with green-colored erythrocytes), diabetic blood. The specimens were heated for two hours to 125° to 130° C. (The ether-alcohol process yields the same pictures.) They were stained in the same eosin-methylene-blue solution according to directions given in the preceding article.

a, leucocyte (epsilon cells—Ehrlich); *b*, eosinophilous cells (alpha cells—Ehrlich); *c*, smallest lymphocytes, showing a delicate seam of protoplasm; *d*, medium-sized lymphocytes, with basophilous granulations; *e*, large lymphocytes; *f*, platelet patches. The platelets (smallest blue bodies) in A show small white globules; in B these are larger and of irregular shapes. *g*, red blood-corpuscles. Those marked with letters on Plate A have small white dots in the central portion which I have called stigmata of the erythrocytes (see *Arch. f. mikrosk. Anatomie*, vol. xxxv, p. 441). It will be seen that some of the red blood-corpuscles have distinct dots, colored the same as the protoplasmic bodies of the erythrocytes. I consider them the atrophied or senile nuclei of the red blood-corpuscles. The erythrocytes show varying degrees of tinctorial power in the normal as well as in diabetic blood.

Apenta Water.—The Apollinaris Company says that, the word "Hunyadi" having become a generic name for the bitter waters of Hungary, there are now half a dozen Hunyadi waters sold that come from springs or wells in the neighborhood of Buda-Pest, but they are of varying strength and composition, according to the standing and reliability of the bottlers. Accordingly the Apollinaris Company is about to introduce Apenta Water, from the Uj Hunyadi springs, near Buda-Pest.

THE

AFFECTIONS OF THE ARCH OF THE FOOT COMMONLY CLASSIFIED AS FLAT-FOOT.*

By R. W. LOVETT, M. D., and
JOHN DANE, M. D.,
BOSTON.

The present paper must be considered as a preliminary one and not as a full discussion of the question of flat-foot. It is the desire of the writers to call attention to certain subdivisions which might profitably be made in those anomalies of the arch of the foot which have heretofore for the most part been spoken of as "flat-foot"; to note certain imperfections in the methods of studying these conditions; and to mention some methods of treatment which have been found of use. The study of the conditions presented in this paper must necessarily be desultory and incomplete, but so large was the field opened by the line of investigation taken up that it seemed best to offer for your consideration the points already elaborated and to ask your assistance in the further working out of the problem which is presented. The treatment of the severer cases of flat-foot which has been so ably discussed by Dr. Whitman will not be considered in this connection.

The Foot at Birth.—The foot of the infant at birth is not flat, although it is so described even in modern anatomies.† At birth, the arch is, in reality, well formed, and the scaphoid lies from 1·5 to two centimetres above the plane of the heel. The tracing of the foot of an infant premature at seven months, and the photographs of the foot intact and dissected, have been described by one of the writers in Dr. Rotch's book on *Pædiatrics*. The tracing of the foot of an infant premature at seven months, and raised in an incubator, shows an arch of nearly the adult type, and the scaphoid lies 1·8 centimetres above the level of the heel.

It seems as if after birth there forms under the arch of the foot a pad of fat, which is apparently Nature's mode of

Fig. 1.—Ordinary type of foot imprint tracing in infants.

Fig. 2.—Type of tracing in a thin infant a year and eight months old.

preventing the arch from breaking down. The real arch is not lowered and the scaphoid is above the plane of the heel, but the foot appears flat if an imprint is taken of it on account of the development of this pad of fat. It would seem as if for the first year or two Nature provided this mechanical cushion to support the arch. In thin children the print of the foot at this age is not that of a flat-foot but of the normal adult arch.

At four or five years the fat is absorbed and the arch again appears in the imprint tracing. A tracing convex on the inside points to the existence of a real valgus or flat foot. In short, the normal foot in children exhibits at birth a well-formed arch, as shown by the tracing. In fat children, from two to four or five years old, the tracing is that of a foot apparently flat. At four or five years old the arch should appear again in the tracing.

The Study of the Arch.—The study of the arch of the

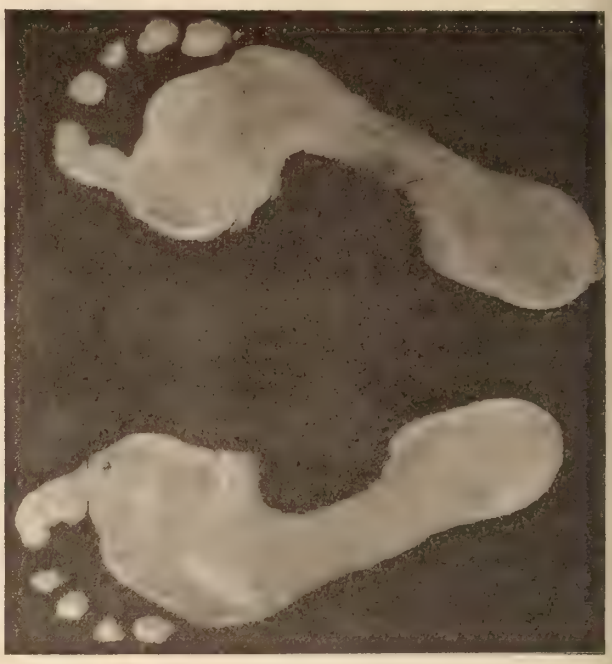


Fig. 3.—Type of tracing described as normal.

foot and its variations from the normal have for the most part been made by a study of the imprint of the foot as shown upon a piece of smoked cardboard, or by the imprint of the wet sole on a piece of paper or on the floor. It is our particular object to call your attention to the fact that this method of studying the breaking down of the arch of the foot is a very imperfect one and subject to wide error, for the reason that certain grades of painful affection ordinarily called flat-foot may entirely escape detection. For example, take such a case as the following:

A woman, twenty-seven years old, has pain after being on her feet constantly, which has lasted two years and extends to the knee and hip. It has been so severe that there is much swelling of the feet at times. Inspection shows

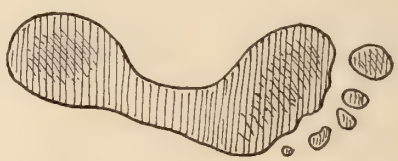


Fig. 4.—Tracing of pronated and painful foot.

plainly enough what we may speak of as pronation of the foot—that is, a prominence of the internal malleolus and rolling out of the foot (in relation to the leg)—but the smoked tracing shows an imprint which any one would consider normal. The patient was then photographed in the

* Read before the American Orthopædic Association, at Chicago, September 18, 1895.

† Walsham and Hughes. William Wood Company, New York, 1895.

ollowing way. A long exposure plate was used, and for the irst half of the exposure she stood with the muscles all ontracted to hold the foot in the correct position (that is, vith the line of the leg passing through the second meta-arsal). In the second half of the exposure the foot was llowed to assume its natural position. It may be seen by ooking at the drawing that there are two distinct positions, ne with the foot in the normal position and the other with he foot in the pronated position. With pronation is neces-arily associated anatomically, as may be seen in the draw-ng, an abduction of the forward part of the foot.

Here, then, is a case of painful difficulty in the feet, accompanied by a marked degree of pronation at the ankle joint, which is not shown by any abnormity of the smoked racing.

The excursion made by the internal malleolus when the foot gives way under these circumstances was measured in some cases. In the case of a man, twenty-eight years old, who had pronation of the foot for a year, and where under

Fig. 5.—Outline drawing of a foot from a photograph in normal and pronated position, showing the inward excursion of the internal malleolus.

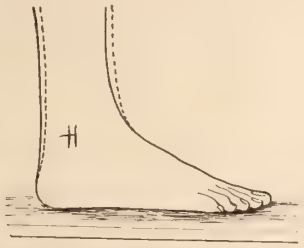


Fig. 6.—Outline drawing of a foot from a photograph in normal and pronated position, showing the forward excursion of the outline over the external malleolus in the pronated position, as shown in the dotted outline.

fatigue and constant overwork a painful condition was rapidly developing, the measurement was made. The foot was placed against an upright without weight bearing. The distance from the upright to the internal malleolus and to the scaphoid was measured. The weight was borne upon the leg and the measurement was made again in the pronated position. Every care was taken to have this measurement accurate, and it was found that the internal malleolus fell in 0·8 centimetre, while the internal surface of the scaphoid fell in 0·7 centimetre. Measurements of value could not be taken from the external malleolus because, as shown in the photograph of this patient, the external malleolus travels forward with the pronation of the foot.

To study abnormities of the arch of the foot by means of the smoked tracing alone is as if one were studying typhoid fever with a thermometer which did not register below 101°. This would be quite sufficient to detect the severer grades of fever, but it would entirely overlook slight rises of temperature. This condition should be spoken of as "pronated foot." It is not flat-foot, because the arch has not broken down, and it would seem best to reserve the term of flat-foot for cases where the imprint of the foot showed a real lowering of the arch. It would be very desirable to find some means of measuring this pronation. Possibly estimating the height of the internal malleolus from the ground in relation to the length of the foot may be of some use in the future, but so far the

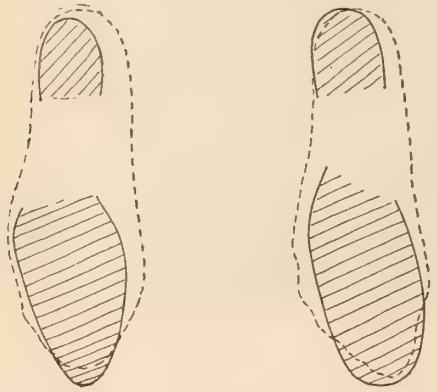
Fig. 7.—Tracing of a flat-foot. No symptoms, foot useful.

writers have been unable to devise any satisfactory method of mathematically estimating this condition. In the experience of the writers the pronation of the foot is the one element that seems to bear relation to the amount of pain in practically all troubles with the arch of the foot, whether the arch is broken down or not, and to the study of this they would beg to direct attention rather than to imprint tracings.

The *symptoms* of pronated foot and flat-foot are the same at the onset. The pain and other symptoms vary more in relation to the amount of pronation than in relation to the breaking down of the arch. This fact has been overlooked. The earliest symptom is generally to be found in weariness and discomfort on long standing. The feet feel hot and flushed and may prickle. The patient is obliged to spare the feet, and there is often difficulty in getting boots to fit. Pain is the commonest symptom; it comes on after long standing and it may radiate up the leg and thigh. It is confined to no especial location. Sensitive spots are generally present. The veins become enlarged and the feet sweat profusely. After resting the feet often feel stiff and clumsy. Patients begin to walk with the feet everted and tread over the inside of their boots. The gait is clumsy and lacks elasticity. Swelling of the feet and legs may occur and abduction of the forward part of the foot is rendered likely. Other symptoms which may be present are backache and sometimes discomfort in the knees, especially in neurasthenic patients; pain and inflammation in the metatarso-phalangeal joint; ingrowing toenail and sometimes bunion. Tenosynovitis of the tendons in front of the external malleolus is a common symptom, especially in rheumatic patients.

The *causes* of pronated foot and flat-foot are the same and will be considered together. Pronated foot, although most often an early stage of flat-foot, is not necessarily so. In general terms, it may be said that either deformity is caused by a disproportion between the weight to be borne and the muscular power which bears it. The occurrence of the deformity is rendered more likely by the shape of modern boots. The immediate causes of these two conditions are the following, in the order of their approximate importance:

1. Bad boots. The most fruitful cause of pronation of the foot is undoubtedly to be found in the use of improper boots. Merely to illustrate the sort of boots that are being worn, the writers would submit the following tracings



Figs. 8 and 9.—Feet and boots, tracings. The boots are shaded.

taken from certain young women applying for the position of nurse at a hospital where they are under the inspection of one of the writers. In each case the foot was placed upon the ground and weight borne upon it, and an outline in pencil was drawn around the foot. The boot was then placed upon the same paper and the outline of the boot drawn in another color. The diagrams illustrate the relation between the sole of the foot and the sole of the boot. They are not extreme instances, but represent merely average tracings selected from about a hundred at the writer's disposal. They illustrate the sort of boots that are being constantly worn, which must necessarily do much harm. They do harm by throwing the big toe outward, crippling the feet, not only by squeezing the metatarsal bones together, but by impairing the usefulness of the flexor longus hallucis, which can only work to proper advantage when the great toe is in line with the inside of the foot. This displacement outward of the great toe deprives the foot of its legitimate inside support, the support which should keep it from rolling over and pronating.

In a perfect foot Meyer's line should pass through the central point of the heel. This line is a prolongation backward of the axis of the great toe. One hundred imprint tracings were taken from applicants for the position of firemen and policemen, by the kindness of Dr. Morton Prince, at the office of the Civil Service Commission, Boston, and they were studied with regard to this position of the great toe. The applicants were naturally from the middle class, where the men were likely to have worn large boots, and to have been as likely to develop the normal foot as any class in the community. Yet in no one of the cases could a line be drawn backward from the great toe which

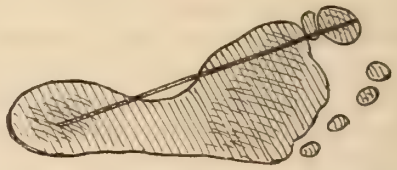


Fig. 10.—Meyer's line in a normal foot.

would have fallen even within the outer border of the heel. In a series of one hundred tracings of nurses the deviation of the great toe was still more noticeable. If one reflects

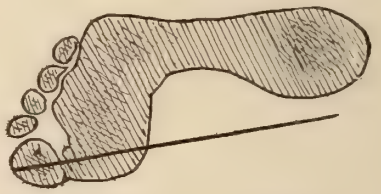


Fig. 11.—Meyer's line in an average foot.

upon the symmetrical shoes which children wear, with the inside and outside alike, it must be obvious that this process of displacing the great toe outward begins in early childhood. It is to this matter that we would especially call your attention in speaking of boots, as it seems as if modern footwear deprived the foot of a legitimate support and favored the position of pronation.

2. Weakness or insufficiency of the muscles resulting from—

(*a*) Long standing, especially on hard-wood floors.
(*b*) Rapid growth.
(*c*) Poor health and debility.
(*d*) Convalescence from acute illness.
(*e*) Rapid gain of weight.
(*f*) Accident or injury causing disuse of limb.

3. Excessive weight-bearing, as in the case of professional strong men and jumpers.

4. A shortened condition of the gastrocnemius muscle, as described by Shaffer. Unless dorsal flexion of the foot beyond a right angle is possible, it is impossible for a person to complete the step with the leg straight behind him and the foot pointing forward. Eversion of the foot is necessary, and a completion of the step by rolling over on to the inner side of the foot. This, of course, tends to produce pronation and breaking down of the arch.

5. Rickets, for the most part to be observed among children.

6. Infantile paralysis.

7. Direct traumatism.

8. Locomotor ataxia and similar organic nervous diseases.

Pronated foot and flat-foot coexist often with rheumatoid arthritis and neurasthenia. There is also a type of intractable flat-foot seen in young adults, accompanied by muscular atrophy, where treatment is of little avail. Its ætiology is most obscure.

"*Contracted foot*" is the term which the writers would apply to a condition described in part by Dr. N. M. Shaffer

Fig. 12.—Tracing of a contracted foot. No symptoms, foot useful.

under the name of non-deforming clubfoot. Contracted foot is characterized by a limitation of the dorsal flexion of the foot, or by an elevation of the arch of the foot, so that the outer border does not rest upon the ground. The latter condition is made evident by an imprint tracing, and the former by passive manipulation of the foot by the leg held straight. Contracted foot may or may not induce pronation of the foot, and in many instances is probably the early stage of flat-foot.

The symptoms are similar to those of flat-foot: Pain and discomfort in the feet in standing, and particularly on walking; pain often located between the fourth and fifth metatarsals, often spoken of as Morton's disease. Pain in the knees and backache are among the common symptoms.

Diagnosis.—The existence of flat-foot can be demonstrated by having the patient step with the wet sole upon the floor or upon a piece of paper, or more accurately by having the patient with the bare foot step upon a piece of cardboard blackened with camphor smoke. In either case the imprint will show whether the arch is normal or whether it is abnormally high or low. In the former case it is contracted foot and in the latter case flat-foot. If dorsal flexion of the foot is limited at a right angle, contracted foot is present. The presence or absence of flat-foot proper depends entirely upon the study of the imprint tracing. The existence of pronated foot must for the present be detected by the eye, which will notice whether in standing the line of the leg passes, as it should, through the second toe or the outer side of the first toe when weight is borne upon the foot. It may be noted in passing that in one hundred tracings of nurses studied the condition of contracted foot, as demonstrated by the tracing, existed in one nurse in ten, and that a tracing perfectly characteristic of flat-foot existed in the same proportion of cases in one nurse in ten, yet in no one of these apparently abnormal tracings was pain or disability present.

Fig. 13.—Pronated foot without breaking down of the arch. See tracing.

Fig. 14.—Flat-foot—painful. Showing similarity of position to that in Fig. 13.

Treatment.—Pronated foot and flat-foot differ but little in treatment, except that in the former support to the arch of the foot is not always necessary. Remedial measures will be considered in order, beginning with the mildest.

Fig. 15.—Boot of improved pattern (the inner edge is not quite so straight as it should be theoretically).

1. *Boots.*—Proper boots should be insisted upon. The essentials of a good boot are the following:

(*a*) A straight, or nearly straight, inside edge.

(*b*) The sole of the boot should be as wide as the sole of the foot when weight is borne upon it, across the front of the foot opposite the metatarso-phalangeal joint.

(*c*) The shank should not be cut away on the inside, but should be moderately high and should support the arch of the foot.

(*d*) The forward part of the boot should be at an angle to the back part, so that the foot should be held in the position of adduction. In short, the sole of the boot should be constructed on a curve with the convexity outward. Pronation, it has been seen, is necessarily associated with abduction. Anything which tends to diminish abduction tends to prevent pronation. Consequently, the boot which holds the foot in the adducted position is most likely to prevent the occurrence of pronation.

Practically the same points are essential in the boots for children.

2. *Raising the Inside of the Boots.*—In cases with troublesome pronation, but with no breaking down of the arch of the foot, it is desirable to raise the inner side of the sole and heel of the boot an eighth or a quarter of an inch, or more if necessary. This is done by making the inner side of the sole and heel thicker than the outer side. This throws the foot more to its outer side and changes the bearing of the foot. This may be done whether or not plates or pads are used.

3. *Supports.*—If the arch has broken down, or if raising the inner side of the boot until the correct position of

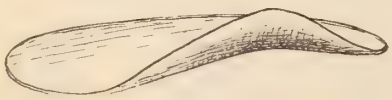


Fig. 16.—Flat-foot plate—right foot.

standing is induced is not sufficient, a brace may be applied with a pad over the internal malleolus which shall throw the foot over on to its outer side. A pad or a plate may be applied to hold up the arch of the foot and, by supporting the weight in that way, to throw the foot on to its outer side. In the hands of the writers the use of a simple silicon-bronze plate, accurately shaped to fit the arch of the foot, has produced the best results. The limits of this plate are shown in the figure. The use of pads of felt or leather, of elastic springs, and of other devices has not, as a rule, been as satisfactory in the hands of the writers as that of a metal rigid plate. Pads of leather or felt tend to break down the shank of the shoe, and in time to make it convex downward. It is, to our mind, of the greatest importance that the plate should fit accurately, and, if possible, patients should be fitted by the workmen where the plate can be bent hot. This measure has been adopted by the writers because it was found that sore spots in the sole of the foot were not reproduced if the plate was fitted on a plaster cast, and that the comfortable fitting of the plate was a matter of precision only to be obtained in this way. The writers would wish to insist most strongly on this accurate adjustment of the plate. Plates are not applied with the idea of furnishing a permanent support. They are put in, on the contrary, with the idea of being removed as soon as the foot shall have been restored to its normal condition. In certain cases there seems to be what one would almost call a reflex irritation in these feet, which leads to a breaking down of the arch. That is to say, if these feet are padded or soothed by plates or by rest, the arch is, to a certain extent, restored temporarily, and it is a common experience in the use of accurately fitting plates that after a month or so a patient becomes uncomfortable, and it is found by inspecting the marking on the plate that the arch has raised so that the plate fails to support it and the plate must be arched still more in order to be a support. The writers can recall three recent patients, one a woman weighing one hundred and ninety pounds and the mother of four children, who have been able to go without plates after wearing them from six to ten months. This the writers do not attribute entirely to the use of plates but also to the general treatment.

With regard to the general and local treatment other than the use of proper boots and plates, the writers would wish to lay great stress upon the value of massage and exercises for restoring the use of the muscles at fault. In pronated foot and flat-foot it is common for the circulation to be poor, the veins to be enlarged, the feet to sweat profusely, and for the general circulation of the feet to be in a very unsatisfactory condition. It is obvious under these circumstances that massage and manipulation are strongly indicated, and in cases where these are not obtainable that exercises should be prescribed which should call into activity those muscles which support the arch of the foot and tend to produce an adducted position. Forcible adduction of the forward part of the foot against resistance, rising on tiptoe, and similar exercises are types of the requirements in this respect.

With regard to the treatment of contracted foot, certain cases, especially if acute, are relieved by placing a pad of felt or a metal plate under the abnormally high arch. Other cases are not quieted by this measure, and require stretching of the gastrocnemius muscle by Dr. Shaffer's shoe, a remedy which is also useful in certain cases of pro nated foot associated with limitation of dorsal flexion. Patients with contracted foot, as a rule, find comfort in wearing boots with moderately high heels.

It is difficult to present a summary of a paper which at best is only a brief mention of many points. What the writers would particularly wish to call to your attention are the following points:

There are three well-marked conditions which give rise to much the same symptoms, which are associated with some abnormity of the foot. These are pronated foot, flat-foot, and contracted foot.

Pronated foot and flat-foot are most often favored by bad boots which render the feet vulnerable and improperly supported.

The ætiological relations of contracted foot are entirely obscure.

The treatment of these conditions consists in the use of boots which shall allow the foot to be placed upon the ground in its proper relation and which favor a correct position of standing.

If the arch is broken down, some appliance should be used to support it so that the foot may rest in the proper position.

These appliances are used merely as temporary measures, and should only be applied in connection with exer-

ises and manipulation intended to restore the muscles to neir normal function.

AN HISTORICAL SKETCH OF GREEK,

THE PROPOSED INTERNATIONAL LANGUAGE FOR PHYSICIANS.*

By ACHILLES ROSE, M. D.

When I offered to read a paper this evening, it was my ntention to speak on the new anatomical nomenclature ffered by a German anatomical society. I not only had it n view to concur with those who have already expressed hemselves on this new lexicology, and who have said that he commission of anatomists who composed the work nentioned have *not* done what they proclaim that they have lone: I wished to go a step further and demonstrate in vhat way the commission could have fulfilled their promise —could have executed their intention.

As we know, the authors decided to give all words in ne language—in Latin—and to construct them correctly. n reality most words are, and it could not be otherwise, atinized Greek, or they are hybrid words; in some of hem, of more than two syllables, we find the syllables alter- nately from the one and the other language; and finally, as nas been shown already, many words are grammatically in- correct.

Any one who gives a glance at this new nomenclature an not fail to notice barbarisms in large number. In this copy which I pass around I have marked some on the first pages.

The anatomists have undertaken a thing which was an impossibility—namely, to develop further (*fortbilden*) a dead language, to treat a dead language as a living one.

Had the commission, however, taken the living Greek for a basis, had they made use of a modern Greek anatomy, had they consulted real Greeks, they would have fulfilled all their promises, executed all their intentions, without the arduous labor of seven years and the expenditure of quite a sum of money, as enumerated by them. Indeed, their arduous work would have been unnecessary if the lexicology of our Greek colleagues of to-day—the best imaginable—had been accepted.

To prove the superiority of this really homogeneous, faultless Greek nomenclature, I wrote to Athens for a modern Greek book on anatomy, since I could not find a copy in New York. The book arrived too late for the completion of my preparations, and so I selected another subject. Some of you will reproach me for occupying your time with a theme which may appear unusual in this place, but if it were not for this I should not regret the change, because, before we can understand the significance of the living Greek language as the one to be selected for our anatomy and for other practical purposes, we must come to an understanding of the language itself, and this can best be accomplished if we begin with the study of certain historical facts.

* Read before the German Medical Society of the City of New York, February 3, 1896.

Some years ago the Greek question was introduced into the medical world by no less a person than Rudolf Virchow, in his inaugural address as rector of the Berlin University, on October 15, 1892. While Virchow only spoke of school Greek, and did not mention by one word living Greek, the credit is due to the *Medical Record* of having been the first to call our attention to living Greek. The impulse which was given by the editor of that journal has found an echo in the medical press; in all languages in all civilized countries has the subject been discussed; even in the scientific papers of German philologists has the question been considered. The Greek question has thus become a legitimate one for us, and, judging from the interest with which it has been treated, we may surely predict a brilliant future.

If we come to an understanding of the significance of the living Greek language, if we familiarize ourselves with certain facts concerning this idiom, we shall notice first of all that there exists much less a new Greek than there exists a new German. We shall find that the language which is spoken and written in Greece this very day is exactly two thousand three hundred years old. We shall find that the prevailing assertion that we do not know how the Greek was pronounced during the classical period is based upon an error. We shall find that the stones from the seventh century B. C., and from that time through all the centuries until the present one, speak to us and give us the pronunciation of each and every century.

We shall have to deal with many errors concerning the Greek language and the Greeks themselves, with errors which are as extensive as almost the whole civilized world and as old; the ones as old as the dissociation of the Latin from the Greek Church—that is, for over eight hundred years; the others as old as the notorious *Dialogus Erasmi Roterdami de græci latinique pronunciatione*—namely, three hundred and sixty-eight years.

When Napoleon, in the year 1813, before the battle of Lützen, made his preparation, he wrote to the Duke of Ravigo how he wished public opinion should be influenced, and concluded his remarks with the words *Vérité, simplicité.* With truth and simplicity alone can the errors concerning Greek be crushed.

To do justice to the subject the time allowed for a simple lecture would be too short. It will be enough if I confine myself this evening to giving a sketch of the historical development of the modern Greek language.

My remarks are based not only on the researches of prominent native Greek philologists. I wish to mention especially Hatzidakis, who, like many learned Greeks, has made his studies of old Greek philology in German universities, and who with pride calls himself a scholar of Delbrück; and, further, I wish to mention the great scholar, Papademetrakopulos, whose crushing arguments, as my esteemed friend Professor Leotsakos expresses himself, are not less formidable in strength and length than his name, but also the writings of different authors of different countries found in the periodical Ἕλλας, published by the Philhellenic Society of Amsterdam, and other periodicals and books.

It is impossible to reasonably dispute the fact that the Greek language of to-day is an uninterrupted continuation

of ancient Greek. The living Greek of to-day shows much less deviation from the Greek of two thousand and more years ago than any other European language shows in the course of centuries.

In the great days of Greece, when its literary works received the applause and admiration of enlightened scholars, authors took great pains to write well, fearing that they might be despised or forgotten. This emulation produced great works. The language was at its greatest perfection. Every writer found the beautiful form for his thoughts and for the expression of his ideas. Inevitable vicissitudes, in the first instance of civil dissensions, have gradually led to decadence. Literature received less and less serious attention. Poetry was first to decline. Orators and historians were replaced by speakers and chroniclers. Polybius, the historian (204–122 B. C.), complained of the difficulty he had of putting a nice thought into equally nice form, and he asks his readers not to pay so much attention to the form as to the contents of his writings. Such request could never have been made by Thucydides or Demosthenes. The land of heroes, of liberty, came under bondage, and the powerful and creative spirit of the old Greeks weakened.

The history of the Greek language is the mirror of the history of the Greek nation. Naturally enough, a depressed and suppressed nation can not create national works. Patriotism, national pride, free political life, and religion are the necessary base to inspire the creation of great monuments of literature. While the later Greeks, however, could no longer write classically, they retained a keen sense for the beauties of the classical language. Instead of creating new works themselves, they became imitators of the old writers, scrupulous imitators of their words and forms.

All nations have more or less a double language; nowhere do the illiterate use the same forms and words as the educated; even the latter use only exceptionally artistic and choice language. A well-marked diglossy has existed among the Greeks at all times.

When, after Alexander the Great, Greek had become the world and court language, a language for prose, the literary and the language for the educated class was created, the so-called κοινή, the general, and the foundations of this general language were the Attic writers; admixed were provincialisms.

The sources for the study of this language, the κοινή, are, the writers of the Alexandrian period, above all the papyri and the numerous inscriptions which are found in all parts of Greece. This fine literary language, the κοινή, is yet the language of to-day; it is a finished language which has taken up to its completion words from the dialects, but which is independent of dialects. It is the centre around which the dialects are arranged.

Through two thousand years the Greek language has proved itself of a most remarkable tersity compared with the Romanic and the German languages; it is surprising how little Greek has changed in words as well as in forms. Most grammatical forms of the pure Attic are in use this very day. The difference between the new and the old consists principally in the simplification of old grammar; the new elements, forms, and construction in the new Greek are only exceptionally formed. This simplification, consisting in the generalizing of some and dropping of other elements, did not take place recently, but during the time of the establishment of the κοινή; it is therefore not a characteristic of the new Greek, but it appears more clearly and distinctly in it.

It has been said that the firmness and the tenacity of the character of the Greeks, who, more than any other subdued nation, remained true to their customs and habits, were the cause of their clinging to their language more than any other nation. But there exist other peoples with as much tenacity of character as the Greeks who also have preserved their customs and habits, who, however, did not preserve their language unchanged through all the centuries as the Greeks did. Greek of to-day is essentially old Attic Greek. By the Greeks the contemporaneous language of the different periods of Greece was never used instead of or confounded with the κοινή any more than by the Romans during the fourth and fifth centuries of the Christian era would be used the Italian of their time, which was considered as being corrupt, instead of the classical Latin. At no time was there a contemporaneous general demotic language deviating much from the κοινή; if such a language, deviating as much as, for instance, French from Latin, ever had existed, there would be quite a different Greek literary language at present.

One of the most plausible reasons why the Greek of to-day is essentially the Greek of the old glorious time, is the magnificence of beauty and contents of the classical monuments of literature. As a large tree which excludes all sun rays underneath its mighty foliage will not permit other plants to be lighted and warmed and to thrive within its reach, so have the overwhelming magnitude and the sublimity of the classical form of the old literature prevented a post-classical literature from developing. Since the Greeks for centuries had, on the one hand, the richest and most beautiful works of the classical period, and, on the other hand, the most insignificant products of a later time, they naturally enough had recourse again and again to the old treasures. During the reign of barbarism in Europe—that is, from the fifth to the twelfth century—the Greeks were the exclusive, jealous conservators of science, arts, industry; they did not allow, even to themselves, that something of the sacred deposit was changed, as if during this sad gap in the history of Europe they had had the thought of transmitting all intact to more prosperous times. During the Latin and the Byzantine reign the Greek writers, neither controlled nor encouraged by public opinion, neglected themselves, and their style necessarily deteriorated. Books were not read, and every one wrote only for his own satisfaction. Because the beauties of the classicity of old could not be found in contemporaneous works the error was made of blaming the language for it.

It is easily understood that the writers of many centuries, even the less educated, who had nothing of the genius of their ancestors in their admiration of the classical language, retained most anxiously all the old orthography, the words, the modes of expression, the constructions, because all considered the old language as one of extreme beauty.

They looked upon new elements which might be introduced into it as vulgar corruptions. Every writer had the intention to use the aristocratic, pure ideal language instead of the vulgar and irregular. Thus it can be explained that the schools, the church, the administration, the military, the legislature, the courts, the correspondents, and the *literati* of all kinds, during all the centuries while Greece was in bondage, used the archaic language. Books written in dialects, such, for instance, as A B C books or readers, grammars of contemporaneous Greek, were altogether unknown things at those times. In aristocratic society κοινή only was spoken. Even the Roman reign, which in the West had forced many nations to adopt the Latin, had not been able to interfere with the continuation and the cultivation of the Greek, for *Græcia capta ferum victorem cepit.* Rome itself was made a *græca urbs.*

The Roman empire ceased to be. Other nations did not immigrate into Greece, at least not in large numbers. If there had been an invasion numerous enough, it would have left traces in the people's language; that is, in the dialects. The language of the continental part of Greece, however, remained as free from such foreign elements as did the language of the islands, of which it is known positively that they were not invaded by foreigners, especially not southern Laconia and Maina, for instance. Besides, it is to be taken into consideration that the foreigners who did come before the thirteenth century did not come as conquerors, they were simply nomads, people without culture and relatively not numerous; they came among a nation of high culture. It stands to reason that they would adopt the Greek culture, religion, and language much rather than that the Greeks would adopt anything of the kind from them.

An interruption of Greek culture and of the use of the pure, fine literary language has never happened in Greece, not even after the Latin conquest in 1204 and the Turkish in 1453. The Attic, the classical language, became, so to say, transfigured; its forms, words, constructions, expressions, orthography, were considered as something sacred, as something which alone had a right to existence.

Everybody will understand that all the above named conditions were unfavorable to the creation of a new literary language and a new national literature. There remained on the one hand the antiquated literary language, and on the other hand the freely developed popular language—the dialects. Neither one could supply all demands. After the eleventh century the necessity was felt for the alteration of the former, the literary language, as it appeared antiquated. The adoption of a more modern phase, which would be easier understood, was suggested. But then came the Frankish adventurers who conquered Constantinople, divided Greece among themselves, and brought the most terrific misery on the whole Greek world. While the political condition thus grew worse every day, there was a want of national spirit, which is the first condition for a national literature. It remained as it was; the treasures of the classical literature and the church were the only links which held all Greeks together.

Nothing has been more potent in the preservation of the old Greek than the influence of the Church. During the dark night which covered the land while the Turks governed it, there remained, overlooked by the conquerors, two points yet faintly illuminated by the departing sun rays of liberty: the Church with some privileges granted for political reasons, and the inapproachable mountainous regions of old Hellas, where the bravest found refuge from bondage.

All Greeks, more than a hundred times a year, had to hear in their churches, and for hours at a time, the fine old Greek, and principally on this account a knowledge of the old Greek was preserved through all the centuries, even among the humblest people. People, although unable either to read or to write, understood the mass very well, the sermon—in short, everything they heard in church. They could be seen in olden times gathered together and listening attentively to one among them possessed of a certain amount of education acquired in a convent or elsewhere, explaining the difficult words or expressions.

It has been said, on the other hand, that the very existence of the orthodox church has been the cause that living Greek was considered as a new language. The Byzantines, and the people depending on them, were completely separated from the western European nations in consequence of religious political events. The fact is that the Byzantines, their heirs, and their descendants, even to this very day, do not consider themselves as belonging to Europe. We notice this in every newspaper and in daily conversation. When Greeks speak of Germans, French, and English, they name them, as in contrast to themselves, Europeans. The orthodox Church forms a world of its own; it is a complex of nations and states, some of them half civilized, living between civilized Europe and barbaric Asia. This multiform composition of nations, which in the past has been the wall against Asiatic barbarism, seems to be destined for the future to be the medium of bringing civilization from Europe into Asia. Up to date it has been little known, but much misrepresented. This seclusion has been the impediment to the scientific study of the middle and new Greek.

In consequence of the separation of the Occidental from the Oriental Church—that is, the orthodox from the Roman Catholic—the history of the Greeks during the Byzantine time has been neglected by the schools in western Europe. The hostility toward the orthodox church was extended to the Greeks and the living Greek language. Thus we see that the Church on the one hand helped to preserve the old Greek language, and, on the other hand, was indirectly the cause that living Greek was condemned, despised, calumniated. The world is full of wrong and misery caused by religious dissension.

It is about time that our schools turned their attention to the history of Byzantine Greece. While German, French, English, Italian, and Spanish history are treated with all consideration, Byzantine history is treated by a few paragraphs only, so laconically that there is no satisfactory understanding possible.

The close relation of the middle Greek language with the old Greek is evident. There is hardly any branch of classical philology which is not enlightened by the study

of the Byzantines. But also the vulgar Greek, the dialects, and each of the dialects, as we shall see later on, have proved to be essential and important parts of the history of the Greek language. This has been fully demonstrated by a number of Greek philologists: Maurophrydes, Deffner, S. Meyer, Foy, Dossios, Hatzidakis, Psichari, Oekonomides, Thumb, and others.

No contemporaneous language had any literature except in the songs of the Klephts. In the ravines of the Pindus, of the Olympus, of the Aroanias, and of the Peloponnesus the fearless men who raised the name Klepht to a name of honor, constantly under arms, fighting incessantly to guard their independence, with a certain pride developed by their bravery, sang their Klepht songs. These songs are simple and artless, but often sublime as the summits of the mountains that they came from, and of the same natural beauty as the wild flowers which likewise rooted there.

The different parts of Greece are very much asunder, separated by the sea, by highlands, and by other intervening nations. This peculiarity of Greeks living secluded from Greeks became more marked politically when the provinces of the Byzantine reign were conquered. This was another cause why a new people's language would not develop and could not spread. A new national language understood by all Greeks did not exist. There were only the many dialects of the different provinces, and so we find in regard to the people's contemporaneous language polyglossy on the one hand and aglossy on the other. The language to which all the Greeks adhered was the virginal, immortal old Greek.

It is true that in Cyprus and Crete there were for a while attempts made to write contemporaneous language, but these attempts were futile. Writers in the politically and geographically lacerated Greece wrote the idiom of their respective provinces. These dialects were too much intermixed with topical forms and expressions for the majority of the Greeks to understand them, and so none of these writings laid a foundation for a new literary language of the whole nation. Besides, all these writings are valueless; they show no trace of genuine national spirit and national character; they are poor imitations of foreign weak originals. The difficulty of raising the contemporaneous language of Cyprus or Maina to the dignity of a national language became an impossibility with the conquest and political destruction of these two islands.

The Turkish reign brought along with many other evils much ignorance. This ignorance, one would assume, might have favored the abandonment of the old language. Indeed, the people's idioms were spoken during this fearful period, and attempts were made to use the vulgar language in literature, but more than ever in vain. The Roman Catholic priests, in order to make propaganda among the Greeks, used the vulgar language, and monks of this church have translated the liturgy into the contemporaneous idiom of the people, some of these translations being even printed in Latin characters; this same language they spoke in church. The Greeks always entertained a certain dislike toward the people's language, and are careful not to employ it when they speak of sacred things. In some cases it was the Church which caused constructions or changes in the meaning of words. It is on this account that many words which otherwise would have been lost are preserved. Some such words became, so to say, sanctified, and the contemporaneous language, in order not to use these words for profane meaning, was obliged to supply corresponding ones. A Greek will not name, for instance, bread and wine, when spoken of as being used in church, by the names *ψωμί* and *κρασί*, which words are of the people's and not of the literary and the church language, like some others used when spoken of as sacred, *παρθένος*, the virgin, otherwise *κορίτσι*, *κορασιά*. In addition to this aversion against popular language there came the fact that this despised language was spoken, and, of course, badly spoken, by men who themselves were much hated by the orthodox Greeks.

At the time when the Turks conquered Crete and had all Greece under their terrible control, the Greeks commenced to contemplate how to regain their liberty and independence.

A factor in favor of the preservation of the pure literary language during the Turkish reign was that in all the Greek colonies, in Venice, in Moldavia and Wallachia, in Joannina, in Constantinople, in Smyrna, in Jerusalem, in Bucharest, everywhere numerous Greek schools were established and the old classical and new books were printed. All this kept up a most powerful enthusiasm for the old classical Greek everywhere. The old classics were studied with great zeal.

The Greeks inspired themselves by thoughts of the glory of Athens and Sparta. They felt it an insult to be called *Ρωμαιός* instead of *Ἕλλην*. Vessels destined to form in some future time the national navy were given patriotic names like Athena, Themistocles, Epaminondas. A strong old Greek love for liberty and independence developed in these generations. During a period of almost four centuries it kept the hearts of all Greeks inflamed, and culminated in deeds of heroism of the gigantic war for independence.

It could not be otherwise but that this united people, although united under Turkish bondage, should want one common language. One party, in boundless love for all that pertained to old Hellas, wanted the language in which the history of the deeds of the old heroism, of the old love for liberty was transmitted; another party thought that such language was an impossibility, and wanted a modern language free from archaism as the best organ to educate and enlighten the people. This led to an excited linguistic war.

This war lasted long, and was carried on with much zeal and animosity, but it is all over now. The one party did not succeed because it fought against the spirit of the time, which did not accept such a separation of the descendants from the ancestors, and because the language of its literary productions, written in various provincialisms not understood by all, could not possibly be accepted as the general idiom. The other party did not succeed because the archaism which they wrote was not intelligible enough to the mass of the people.

Since neither of the two extremes succeeded, since nei-

ther the written nor the spoken tradition would suffice, a middle way was found and accepted; both forms were united, the one complementing the other; a mixture of old and new elements was established. This procedure was by no means new to the Greeks; it was planned by history itself. From its earliest time the κοινή has not been used in its original purity; different concessions were made to demands of the time—that is, a mixture of the old and the modern was formed. That such a mixture was nothing extraordinary or anything like a disturbance can be seen from the mixed language* of classical poets and from the prose of Xenophon. In making this mixture of old and new elements both were given the old forms. During the time of the Atticists and the Byzantines, as well as afterward and until to-day, the old elements were always considered as beautiful and noble; the new ones, however, as ugly and hurtful. The new elements were introduced for the sake of distinctness and convenience; the elegance was looked for in the old words. This middle way prescribed by history was to unite the Greeks, living, as we have seen, so to speak, in groups far asunder, in the most satisfactory manner, even before the war of independence.

The origin of the Greek of to-day has been discussed a great deal. In the beginning of this century some authors, especially Athanasios Christopulos, said that the new Greek was an Æolo-Doric dialect. This opinion has been criticised by Hatzidakis. He found that such assertion was of no foundation. Although traces of Doric dialect could be found, the fundamental character was the κοινή. New Greek could not be called Æolo-Doric on account of the few Doric elements it contained.

The literary Greek of to-day consists of three elements:

1. Of Attic words, forms, and constructions which after the fall of Greece composed the simplified language, the κοινή, and of elements which, in conformity with the rules and laws of the language, have developed during the following centuries.

2. Of some words, forms, and constructions which during the classical time developed in the old dialects, which, however, entered into the Attic or into the κοινή, and thus formed a part of the entire κοινή.

3. Of some elements of old dialects which have not come with the κοινή, nor through the κοινή, but, on the contrary, independent from it, have been taken into the new Greek literary language.

How these elements were introduced into the κοινή is a question which would lead too far into philological study to be ventilated here. To enumerate examples of words and forms of old dialects thus introduced, words which are familiar to everybody, I will mention θάλασσα instead of θάλαττα, and the word ἀλέκτωρ, which was unknown in the Attic. The Athenians during the classical period did by no means speak the pure and fine Attic of Plato and Demosthenes; this can be shown by quotations from some old writers and also by inscriptions. It is most probable that some elements from old dialects have entered into the Attic and later on into the κοινή.

The literary Greek language of to-day owes its existence in some part to the exertions of the great patriot Kopaïs. Although the party of the καθαρισταί and the party of the χυδαϊσταί both stood up against Koraïs, the power of history, which was on Koraïs's side, was too strong for both parties, as we have seen.

Ἀδαμάντιος Κοραῆς was born April 27th, in the year 1747, in Smyrna. From early youth he devoted himself to the study of old and new languages. In obedience to his father's wishes, he followed a mercantile career during the years 1772–'78, without, however, neglecting the sciences. From 1782–'88 he studied medicine in Montpellier and established himself as a practising physician in Paris. From there he worked incessantly for the education of his compatriots, and endeavored to awaken a favorable opinion of his nation in the Occidental countries. In 1800 he received the prize of the academy for an edition of the writings of Hippocrates, but before this time he had already attracted the attention of the world of learning to his ability. Later on he gained fame by his Greek translation of Beccaria's work on crimes and their punishments. This was followed by a work entitled *De l'état actuel de la civilisation en Grèce* (Paris, 1803). This was the first publication which in Europe gave true information on the intellectual and moral conditions of the new Greeks. During the time from 1805–'27 he published a collection—twenty volumes—of old Greek classics, with critical explanations and prolegomena. In the latter he gave his patriotic teachings and advices. His greatest merit consisted in his promoting the Greek language; he purified it as much as possible from foreign elements, but retained all that was good and useful from all centuries, refusing the one-sided retention of the old words and forms not compatible with the understanding of the people. He above all helped to establish a noble literary language. On account of his old age he could take part in the rising of his fatherland in 1821 through patriotic writings only. When Greece had gained her independence he took active interest in the new formation of his country. In 1830–'31 he attacked the government of Kapodistria in two publications. These, his books, were by order of the brother of the president, Augustine Kapodistria, in 1832 publicly destroyed on the stake in Nauplia. He died in 1833. His autobiography appeared in Paris in the same year.

As we have seen, Koraïs was still alive during the great national war. In the first year there came the necessity of a constitution and of a legislation. Which language should be chosen? The contemporaneous people's language was not feasible, because it was as varied as possible; the Greeks as an entirety could not have understood it; besides, this people's language was poor and incapable of expressing ideas. The majority of the men composing the delegations were not teachers, or professors, or archæologists; they were physicians, sailors, merchants, priests, soldiers, and they used the mixed language sanctioned by practical use at that time. This language of the constitu-

* In speaking of mixed language in regard to Greek it is not meant to say that Greek had any foreign elements. In this latter sense the Greek was never a mixed language. The living Greek is the genuine daughter of the old Greek.

tion and legislation was the same in which the journals were written, in which the correspondence was kept. It was a time of actions of great national impulse when this language was thus officially adopted, this language which had been predestined by history.

When Greece had regained her liberty after almost four centuries of Turkish bondage a regular government was to be erected. Countless numbers of demands were made on the language. A new life, a culture of which there had been no idea before, appeared suddenly before the Greeks. The language had to keep pace with the many new political, scientific, technical, commercial, journalistic requirements. Another nation would certainly under such circumstances simply have adopted with the foreign ideas the words also of foreign people, and would have formed a half-French and half-hybrid language. Not so the Greeks. Their history, their national pride, led them to exclude foreign words, led them to take the necessary elements from the old Greek to create new symbols for new ideas. This was a gigantic work. Stephanos Kumanudes has enumerated thirty thousand words which have been created during the last hundred years. Let us illustrate how the work was done by a few examples: During the eighteenth century the foreign word *σταμπερία* had been used for printing establishment, then *τυπογραφία* had been formed, and from the latter a great many combinations were made which could not possibly have been formed from *σταμπερία*. In the same manner was *ἀβουκάτος*, then the genuine Greek *δικηγόρος*, or first *πόστα*, the *ταχυδρομεῖον*, etc. These and thousands of foreign words are now entirely out of use, and may be known only to the oldest people; the majority of the Greeks have no recollection of them. This process continues wherever a foreign word has been introduced. In my child's *ἀλφαβητάρων* I find the word *μαϊμού* (monkey). In vain should I look for it in a Greek dictionary. It is not a regular word adopted by the literary language. From *μαϊμού* we can form the diminutive *μαϊμουδάκι*, but that is all; while from the genuine and regular word *πίθηκος* I can form *πιθηκίζω*, *πιθηκισμός*, *πιθηκιστής*, etc. This shows how the metaphoric use of words like *μαϊμού* is very limited, that of *πίθηκος*, however, very extended. This facility of combinations which is so frequent is a great advantage in regard to genuine and regular Greek words.

Greek, the new literary language, has steadily become richer and more homogeneous ever since 1821; it undergoes changes all the time. Construction and forms are constantly remodeled after the old Greek, especially in those words and expressions which are taken from the old language; notwithstanding this the new Greek remains a mixed language. The remodeling is called purification. Incorrect elements, when discovered, are extirpated with more and more severity and tact. Greek has changed from age to age because it has continued to live; only what is dead, like Latin, does not change any more. The Greeks now possess a highly developed language; they can without much difficulty translate every thought expressed in a foreign idiom into this their mixed language, a thing which even Koraïs did not always succeed in. The Greeks of all parts can communicate with each other easily without the slightest fear of misunderstandings. Babylonian difficulties are an impossibility to-day. To what extent this language has spread we find when we consider the highly developed journalism, and the innumerable works which have been translated from other languages into Greek. Greek is the language of culture in the Orient.

By the establishment of this literary language there have been gained quite remarkable advantages. Everything written by the Greeks of to-day can easily be understood by all those who have learned a little Greek in colleges in foreign lands. This could not be the case if some of the dialects had been adopted. The greatest of all advantages, the most important, is the great similarity which exists between the literary language of to-day and the old Greek in regard to orthography and forms. For this reason the old Greek is not like a foreign language to the Greeks of to-day. How deplorable if it were otherwise, if the immortal treasures of the old literature were not their own! They would not be if another system, if the Latin alphabet, which was tried during the Frankish reign, had been adopted.

Let us once more take a look at the language question as it stood, and, as some will have it, as it stands perhaps among some querulous people to-day. There existed in Greece until the language question was firmly settled three parties: 1. The Purists or Atticists, *καθαρισταί*, or *καθαρισταί τῆς γλώσσης*, as Koraïs called them, who wish to carry purification to the extreme; they recognize only those words which are found in the old Greek literature as entitled to be accepted in new Greek. It is plausible to any one that not all words which really existed in the old Greek language have been employed in literature, and besides, a considerable, say the largest, part of the literature which once existed in old Hellas has not come to us; thus these Purists seem to place old Greek on the same footing with Latin.

2. Those who adhered, and adhere, to the literary language in use to-day.

3. Those who wished, and wish, for the vulgar Greek idiom; these are called the *χυδαϊσταί*.

That the Hyperatticists did not and will not succeed can be seen from history. Two thousand years ago Atticists, like Phrynichos, Mocris, and their disciples, were carrying on the same controversy; they wanted the same purification as the *καθαρισταί* of to-day, but in vain.

Prose, science, school, and press will uphold the literary language; poetry, especially the comical, will find its appropriate organ in the people's demotic (Klephtan songs, almanacs, comic journals) idiom. This will be as it was during the golden age of Greece, as is found in the chorus of the Attic tragedy and in lyric poetry.

Modern literary Greek, as history shows, is but Attic simplified and complemented.

The New Orleans Medical and Surgical Journal.—Dr. Augustus McShane retired from the editorship with the issue of the February number, to be succeeded by Dr. Charles Chassaignac and Dr. Isadore Dyer. The ownership will be in the hands of a corporation of physicians.

THE SURGICAL TREATMENT OF BACKWARD DISPLACEMENTS OF THE UTERUS, WITH SPECIAL REFERENCE TO VAGINAL FIXATION.*

By HIRAM N. VINEBERG, M. D.,
ATTENDING GYNÆCOLOGIST TO ST. MARK'S HOSPITAL, THE MOUNT SINAI HOSPITAL DISPENSARY, AND THE MONTEFIORE HOME FOR CHRONIC INVALIDS.

The treatment of backward displacements of the uterus forms an important feature of the gynæcologist's work. Despite the assertions one occasionally hears, and notwithstanding the statements one now and then finds in literature, that uterine displacements frequently give rise to no trouble, I think most observers will agree with the writer that, as a rule, such conditions sooner or later produce symptoms of greater or less severity. Excluding the cases of congenital retroversions, and the cases of retroversion sometimes accompanying lactation and senile atrophy, I have during an extensive dispensary and a moderate private practice of over ten years seen but few cases that did not cause considerable trouble at some time or other. It may be that freedom of symptoms obtained for years until conception took place, resulting in an abortion with all its consequences,† or the woman may have gone on for years ignorant of the fact that she had any pelvic lesion until the malposition brought about chronic metritis or involvement of the tubes and ovaries, or until adhesions had formed. Of course, the sequence of events is not always in this order. In a large percentage of cases the opposite obtains; there is metritis, pelvic perimetritis, an exudate, or salpingo-oophoritis, each of which may bring in its train a malposition of the uterus. When a woman comes to us and says her backache, bearing-down pains, etc., date back for only a few months, and we find a hard, enlarged, and retroflexed uterus, we know that the displacement must have existed for a long time ere it could have produced pathological changes of such an advanced type. I quite agree with Schultze that abnormal mobility must be looked upon as one of the earliest stages of retroversion, and when left to itself will usually result in the severest degree of that condition. It behooves us, then, to attempt to remedy every case of backward displacement, even if it produces no symptom at the time of its discovery. This, to my mind, constitutes true prophylaxis as well as real conservatism, having for its aim the prevention of serious tissue changes which, when once established, offer but indifferent results with any form of treatment.

As my paper deals only with the surgical treatment of the condition in question, I will merely state incidentally that most authors agree upon the advisability of first making a faithful attempt to cure the malposition by mechanical means—*i. e.*, by either tampons, pessaries, or, I may add, pelvic massage. The more recent the trouble the more likely will it be that these means will succeed. Unfortunately, we do not see the cases in the early stages, and this circumstance in part accounts for the discouraging results usually attending non-surgical treatment.*

Although the number of operative procedures is legion that have been devised for the cure of retroversions and retroflexions, the following alone have stood the test of time and merit our consideration:

1. Shortening of the round ligaments within or without the abdomen.
2. Ventral fixation.
3. Vaginal fixation.

1. *Shortening of the Round Ligaments; Alexander's Operation.*—This operation has several warm advocates in this country. There are, however, some serious objections to it that can not be counterbalanced by the problematical advantage alleged by its advocates that the uterus is held in position by its natural supports. It certainly has not been proved that the round ligaments are the structures that hold the uterus in the normal position. Even granting this to be the case, once they have undergone such change as to destroy their function, they are unfit to perform it in the future. Simply cutting away a portion of them does not render the remaining part healthier and less likely to yield to opposing traction than it originally did.† Another contention for the operation is that it fixes the uterus in an ideal position. I have examined a great number of cases in which the operation had been done. In some I found the fundus drawn over to one side or the other; in others again the whole uterus lay immediately behind the symphysis, with the axis of the vaginal portion parallel to that of the outlet of the vagina. But I am not going to split hairs on this point. In a fair proportion of cases the uterus lay in a satisfactory position.

The insurmountable objection to Alexander's operation has been that it afforded no opportunity of ocular inspection and suitable surgical treatment of the annexa, which are so frequently involved in backward displacements, and of the breaking up of adhesions that exist to a greater or less degree in at least ninety-five per cent. of these cases. These contingencies narrowed down the indications of the operation to mobile retrodisplacements uncomplicated by diseased annexa. And just here came the difficulty: the mobility of the uterus could readily be determined, but the exact condition of the annexa could not be ascertained without direct ocular inspection and direct palpation.‡ To meet this objection it has recently been proposed to first

* Read by title before the Medical Society of the State of New York at its ninetieth annual meeting.

† Rörnheld, on analyzing 232 cases of abortion in Kebrer's clinic in Heidelberg, found fifty-eight per cent. to have been due to retrodeviations of the uterus (*Inaug.-Dissert.*, Heidelberg, 1895; *Ctrlbl. f. Gynäk.*, 1895, No. 39).

* Statistics covering a large number of cases give from seven to ten per cent. of cures. This percentage is considered very high by most gynæcologists. Some give it as their experience that not more than from three to four per cent. are permanently cured. By a permanent cure is meant that the uterus will remain in normal position after the removal of the pessary.

† The percentage of cures is variously stated by different operators. Edebohls says a hundred per cent.; Clement Cleveland, about seventy-five per cent. Davenport has met with a number of failures in his own cases and in those of other operators (*Trans. of the Am. Gynæc. Soc.*, 1894).

‡ Even so careful and able a diagnostician as Edebohls, in a case in which he had to open the abdomen because one of the ligaments tore out at its insertion in the uterus, found an ovarian cyst of the size of a walnut which prior to that had escaped his attention.

make a vaginal incision in the posterior fornix through which the annexa could be directly palpated and the adhesions broken up. Singularly enough, this proposition comes from one of the foremost leaders in the battle that is being waged in favor of the vaginal over the abdominal route for pelvic surgery. One of the strong arguments in favor of the former, justly used by him and others, is that it avoids a weak point in the abdominal wall, with the consequent risks of the development of hernia. The operation of shortening the round ligaments (Alexander's) necessarily produces two such weak points in the abdominal wall. A few years ago, while studying up this point, the writer wrote to two gentlemen with large opportunities of seeing hernias of all descriptions to kindly furnish him with a statement of their experiences in the occurrence of hernia following Alexander's operation. One gentleman replied that in the preceding two years he had seen twelve cases of hernia directly traceable to Alexander's operation. Nine of these women had hernia on one side only, and three on both sides. The other gentleman had seen nine cases of hernia during the same period. The operations had been done by five of the best operators in the city. These facts alone prove that the occurrence of hernia after the operation is not uncommon.

That it should frequently follow the operation is no more than could be expected; firstly, because the tissues have often to be mutilated a great deal before the ligaments can be found; and secondly, because there are but very few operators who have such control of all the conditions that they can invariably secure primary union. Every one agrees that it not infrequently happens that the ligaments are difficult to find, and that when found they are so brittle as to break readily, or so changed by fatty degeneration as to be unfit for the purpose of mooring the uterus.

To first make an incision into the peritonæum (for the peritoneal cavity must be opened) through the vagina, and draw out the tubes and ovaries through this incision for the purpose of exploration and surgical treatment, if this is necessary—a procedure often beset with no small degree of difficulty—then to do an Alexander's operation, which generally is attended with more or less difficulty and consumes considerable time, seems to the writer, though he has the highest regard for the gentleman making this proposition, rather extensive and severe surgery for the condition under discussion. The one great advantage that Alexander's operation had over ventrofixation was that it did not subject the woman to the risks inherent to opening the peritonæum.* The operation done in accordance with the proposed modification effaces that advantage totally and substitutes two weak points in the abdominal parieties for one. Furthermore, the existence of two cicatrices in the abdomen of a woman is not particularly a desirable desideratum. Apart from an æsthetic consideration, a skin cicatrix is not a pleasant possession and frequently gives rise to more or less discomfort to its bearer. These perhaps are minor matters, but they rise in importance if the same end—*i. e.*, a cure of the patient—can be achieved by other methods to which they do not appertain.

2. *Shortening of the Round Ligaments within the Abdomen.*—I have had no experience with this operation. The nicety of adjustment necessary to draw the ligatures applied to the loops of the cord just tight enough to hold, but not so tight as to produce constriction, is so great that the method has never become popular.*

A further objection that will occur to many is the necessity of leaving four non-absorbable sutures within the abdomen. The pranks which sutures of non-absorbable material are prone to play within the abdomen are peculiar and uncertain. The abdomen being opened, most operators would, I think, prefer to do a ventral fixation, which has generally given pretty good satisfaction, and which has stood the test of time fairly well.

3. *Ventrofixation.*—This operation has been modified in various ways. That so many modifications have been attempted probably furnishes strong evidence that the method is not without its drawbacks. For the past three years I have resorted to ventrofixation several times. I have, with but few exceptions, followed the method known as Leopold's—*i. e.*, that of stitching the anterior aspect of the body and fundus to the abdominal wall. In one case known to me pregnancy occurred. The woman went to full term, though she was threatened with a miscarriage at the fourth month. I found the uterus in the forward position when I examined the woman three weeks after labor. The objections inherent to the operation are those attending the opening of the peritoneal cavity through the abdominal wall. As the *pros* and *cons* of the abdominal route have recently been fully discussed, it will not be the purpose of the writer to enter into them, save as he may find it necessary in the consideration of the next method, which he has had the honor of introducing into this country.

4. *Vaginofixation.*—It was early in the autumn of 1893 that I performed the first operation, following pretty closely the descriptions of Mackenrodt and Winter. I presented a short paper on the operation to the New York Obstetrical Society on November 21, 1893, and reported four cases.†

At a very early stage of my work I modified the steps of the operation so that the body and fundus were brought well out into the incision, and the fixation sutures passed with the aid of sight. It is interesting to note that the operation has undergone several similar modifications in the hands of different operators, all independent of one another. As the writer has given a full description of the technics of the operation in his article published in the *New York Medical Journal* for October 27, 1894, it will be unnecessary for him to describe them here. Since then, however, he has made some very important modifica-

* It must not be assumed that Alexander's operation, pure and simple, has no mortality. In a recent paper by Dr. Johnson, of Boston, read before the New York Obstetrical Society, he stated that he had met with three deaths in 240 cases, and that he knew of two more deaths that had occurred after the operation in Boston. Other deaths have also been reported.

* Dr. P. F. Mundé has reported a case in which the sutures were drawn too taut, and as a consequence an abscess resulted which fortunately discharged through the abdomen. (*Amer. Jour. of Obstet.*, May, 1895, pp. 73–77.)

† *N. Y. Jour. of Gyn. and Obstet.*, January, 1894.

tions. In the first place, he has entirely discarded the use of the sound to antevert the uterus. This he now accomplishes in the following manner: After the peritoneal fold has either been torn through with the finger or cut with the scissors, the volsellæ applied to the cervix to draw it to the vulva are now made to push it backward into the posterior fornix of the vagina. This step at once throws the body somewhat forward. Then either with successive volsellæ or traction sutures (preferably the latter, as they are not so likely to tear out) he proceeds up the anterior surface of the uterus until the fundus is reached and it is brought entirely through the vaginal incision. The whole uterus now presents at the vulvar opening. Its anterior and posterior surfaces are rapidly scanned for any pathological growths. Then with two fingers the annexa of one side are brought out through the incision. The ease or difficulty attending this procedure depends upon the extent and firmness of the adhesions existing between the annexa and the pelvic wall and floor. After they are drawn out they can be treated on conservative surgical principles with the same facility as by the abdominal route. To any one who has not seen or done the operation this statement may seem incredible. But it is a fact, nevertheless, that I have often resected the diseased portion of an ovary, whipping over the healthy remaining portion with a continuous catgut suture, and have removed a portion of a diseased tube with the same ease as I have done similar things through an abdominal incision. When the tube and ovary are hopelessly diseased they are tied, as in the abdominal method, and ablated.

The tube and ovary of the other side are then drawn out and treated in the same manner. Two or three silk sutures are now carried across the anterior surface of the uterus about a centimetre apart, the superior one being passed about a centimetre below the level of the insertion of the tubes. The next step consists in returning the uterus (the annexa having been returned before) into the pelvic cavity. This may sometimes be accompanied by considerable difficulty, but I have always been able to surmount it by catching the cervix with a volsella and drawing it forcibly into the position in which it was held at the beginning of the operation by pressing the fundus with the fingers backward and downward. The fixation sutures are next carried through the vaginal flaps by means of a carrying suture. Before this, however, the anterior surface of the uterus between the sutures has been scarified, as in ventrofixation.

It goes without saying that in the event of a laceration of the cervix or perinæum, or both, it is attended to at the same sitting. I have had occasion several times to perform the following series of operations at one sitting: 1. Curettage. 2. Exploration and surgical treatment of the annexa. 3. Vaginal fixation. 4. Amputation of the cervix. 5. Perineorrhaphy. 6. Operation for hæmorrhoids, either by clamp and cautery or by ligature. It has not been my experience thus far to witness any shock or any other ill effects from following this course. The ability to do this expeditiously and with immunity forms, to my mind, an important advantage of this method. Of course, I am aware that the same thing may and has been done with Alexander's operation and with ventrofixation. But if it should take an hour or longer to find the round ligaments, as it often does, the patient would need to be kept under the anæsthetic for an exceedingly long time.

I have performed the operation of vaginal fixation forty-eight times in all. The cases require to be divided into the following series:

First Series.—Simple vaginal fixation without intentionally opening the peritonæum.

Group a.—Mobile retroflexions and versions without recognizable disease of the annexa in five cases. Results: Four cures and one relapse after four months, following an induced abortion. Duration of observation, from seven to thirty months.

Group b.—Retroflexio-versions with adhesions and moderate disease of the annexa. Fifteen cases. Results: Eight cures; seven relapses occurring in from four weeks to four months. Of the seven failures, four were in cases of congenital retroversion. Duration of observation, from fifteen to thirty months.

Second Series.—Vaginal fixation combined with vaginal cœliotomy.

Group a.—Mobile retroflexio-versions, with slight disease of the annexa. Nine cases. Results: Nine cures. Duration of observation, from three to fourteen months.

Group b.—Retroflexio-versions, with adhesions and considerable disease of one or another of the annexa, requiring ablation or plastic surgery. Twenty cases. Results: Nineteen cures; one partial relapse. Duration of observation, from one to fourteen months.

The case of partial failure in group *b* of the second series occurred in a very delicate, elderly spinster, who for over six years had been treated off and on with pessaries and tampons without any success. The uterus was in complete retroflexion, with the flexion very rigid and the fundus moderately adherent posteriorly. There was a small subserous fibroid attached to the anterior aspect of the fundus, which was removed at the time of operation. Owing to extensive adhesions and the poor general condition of the patient, I did not, as in the other cases of this series, draw out the uterus entirely, nor were the annexa brought out for inspection through the incision. The case, therefore, does not truly belong to this series. Of course, some of the cases have not as yet been under observation for a sufficient length of time to justify a positive opinion as to permanent results. With the exception of two or three cases, however, more than four months have elapsed since the operation, and it has been my experience that when a relapse does occur it takes place within the first four months. The statement may therefore be made that in the second series, of twenty-eight cases, the percentage of cures (at least the anatomical) was a hundred. The cases included in the first series go to show that in mobile retroflexions uncomplicated by appreciable disease of the annexa the results are good even without opening the peritoneal cavity. When adhesions exist the results are uncertain, as one might expect. In group *b* of this series there were four cases of congenital retroversion. In one of them I did subsequently a ventrofix-

ation and removed a diseased tube and ovary. Six months later the uterus had again fallen into retroflexion. This case, as well as others of the same nature, emphasizes the inutility of attempting to remedy bad cases of congenital retroversion, attended with symptoms, by any of the operative procedures in vogue. The failures are due to the anatomical condition that obtains, which consists in a shortening of all the uterine ligaments and pelvic supports. It was with the greatest difficulty in the foregoing case that I could bring the fundus up to the abdominal parietes. Dr. Edebohls has reported a similar case in which he could not bring the fundus any farther up than within two inches of the walls of the abdomen. He then did Alexander's operation, but the displacement quickly returned. Finally, he performed vaginal fixation, and again after a few months the uterus was found in retroversion.

Four of my patients, to my knowledge, subsequently became pregnant. One brought on an abortion, as already stated. Two others went to full term. The gestation in these two cases was remarkably free from any disturbances; there were no bladder symptoms, nor at any time did symptoms threatening a miscarriage become manifest. During the same period I had under observation a case of pregnancy in a woman on whom I had done ventrofixation. The patient was threatened with a miscarriage at the fourth month and had considerable pain and bladder disturbances during the greater period of her gestation.

I delivered one of the vaginal-fixation patients myself. The labor was easy and normal in every respect. The woman was exceedingly anæmic, though she lost but a small quantity of blood at the termination of the labor. As a consequence of the anæmia and inability to perform the function of lactation satisfactorily, there was tardy involution, with a tendency for the heavy uterus to fall into retroversion. The wearing of a pessary for a few weeks overcame this tendency. This was one of my early cases.

The other pregnant woman I had under observation until her eighth month, when I lost sight of her, owing to her removal. Up to this time she had been remarkably free from any disturbances. After a persevering search I succeeded in finding her whereabouts on January 19th of this year. I called at the house and learned the following: She had been very well until the day of her labor, June 24, 1895. While she was on the street the day before the waters broke without any pain. On the above stated day, at 2.30 P. M., slight labor pains set in, and ninety minutes later the child, a boy, was born. The doctor (Dr. M. Block) just reached the house in time for the delivery. She had a good puerperium, getting up on the tenth day. She has been very well since, and nurses her baby. She has never felt better in her life, and is doing all her household work alone. Menstruation has not reappeared. On examination, I found a small, perfectly involuted uterus lying in an ideal forward position. It may be of interest to give the following abstract of her history prior to the operation:

Aged thirty years; married seven years; last child three years ago; one miscarriage at two months, eighteen months ago; second labor was instrumental and was followed by some fever for a few days; never quite well since. Following the miscarriage she had chills and fever for forty-eight hours. Ever since then she had been ailing all the time with severe backache, pain across the lower part of the abdomen, profuse leucorrhœa, and frequent micturition, having to get up several times during the night to void urine. On examination the uterus was found retroverted to the third degree and moderately adherent posteriorly. The posterior lip of the cervix was torn in the median line to the vaginal attachment, and was eroded. There was considerable thick, tenacious discharge hanging from the os. She had been treated for several months with tampons and with a pessary without any benefit.

On November 6, 1893, at St. Elizabeth Hospital, curettage, trachelorrhaphy, and vaginal fixation were done. The patient left the hospital on November 27th. She was presented at the New York Obstetrical Society on April 17, 1894. Dr. E. H. Grandin (appointed by the chair to examine the patient) reported that he found her uterus in a good position in the pelvis, fixed anteriorly to the cicatrix in the anterior fornix. The woman had told him that she had had no pain, although previously she had had some symptoms referable to the uterus, such as backache and dragging pain; in other words, the operation seemed to have a field of utility, contrary to his previously formed opinion. He would like to see the patient after a longer period had elapsed, because he thought it very problematical that the operation would give permanent results (Transactions of the New York Obstetrical Society, *New York Journal of Gynæcology and Obstetrics*, June, 1894).*

The third case of pregnancy I saw on January 22d of this year. The woman had been operated on in a tenement house on June 30, 1895, in the presence of Dr. S. Rapp and Dr. A. F. Brugman in addition to my usual assistants. There had been retroflexion of the third degree and prolapsus of the first degree. There were some thickening and sensitiveness on pressure of the right tube. I curetted the uterus, then performed vaginal cœliotomy, and drew out the uterus and annexa through the incision. Two cysts in the right ovary were punctured. Two cysts, each of the size of a cherry, were attached to the distal end of the right tube. These were ligated and cut away. A narrow strip was excised from each vaginal flap. The uterus was fixed by three silk sutures, and the vaginal flaps were brought together by continuous catgut sutures. The uterus was in a good forward position and well up in the pelvis after the operation. The patient made an uneventful recovery. This patient, six weeks after the operation, was also lost sight of, owing to removal, until the above-mentioned date. She was then over five months and a half pregnant, and had no trouble whatsoever. On examination, the cervix was found in a good position in the upper vaginal tract. The uterus lay high in the abdomen in normal position, and, had it not been for the cicatrix felt in the anterior fornix, one would not have been able to tell that the uterus had been vaginofixed.

Now, about the criticisms of the operation that have appeared in this country. Though in one instance coming from high quarters, they have been based entirely on theoretical considerations. It has been said that the operation was illogical; that it disturbed the bladder, etc. As a matter of fact and observation, however, bladder symptoms do not follow the operation. As a rule, some functional disturbances, such as frequent micturition and tenesmus, accompany displacements of the uterus. It has been my

* *New York Medical Journal*, October 27, 1894.

experience that these disturbances either totally disappear or become decidedly less after the operation.

Another criticism brought forward is that it fixes the uterus in a pathological anteflexion. This point has already been touched upon and will be further discussed later. The criticisms that have recently appeared in Germany are of a much more serious nature. In two or three cases of pregnancy following the operation severe surgical interference has been necessary to deliver the woman. In one case Cæsarean section had to be done, and the patient died. But these difficulties occurred in patients operated upon by Dührssen's method, in which the technics is decidedly faulty, and I am pleased to state that I have never followed it. Dührssen's method, as you know, consists in making a transverse incision in the anterior fornix of the vagina, at the vaginal junction of the cervix, in order to avoid injuring the bladder. The bladder is pushed up and the fundus is stitched to the flaps of the incision. The fundus is thus fixed to the vaginal vault just a little anterior to its central point. Taking from two and a half to three inches as the average length of the uterus, it can readily be seen how the fixation of the fundus at that point must throw the cervix far back into the hollow of the sacrum. When it does not do that, it must force the uterus to double up, producing a very acute anteflexion. It was the former condition that gave rise to the difficulty at labor. The cervix pointed backward and upward toward the promontory of the sacrum, so that it could not be reached. Now, in the technics followed by me the fundus of the uterus lies fully from two to three inches farther forward in the pelvic plane than by the Dührssen method. I make a longitudinal incision reaching from near the urethral meatus to the vaginal attachment of the cervix. The first fixation suture is carried through the anterior aspect of the uterus about a centimetre below the insertion of the tubes, and is passed through the vaginal flaps near the urethral opening. The fundus is thus carried well forward, and lies in pretty near the same position it occupies in the normal state. The excellent position of the uterus accomplished by the operation is not appreciable to the onlooker unless he makes an examination afterward.

Dr. T. G. Thomas and Dr. H. J. Garrigues, who did me the honor to be present at two of the operations, expressed great satisfaction with the position of the uterus disclosed to them by bimanual palpation. Owing to an accident in one case, a rare opportunity was afforded me of having an ocular demonstration of the exact position of the uterus. I was doing a vaginal cœliotomy for a diseased ovary and a retroversion. Through inadvertence on my part, a small gauze sponge slipped off the holder into the peritoneal cavity. After making several ineffectual attempts to reach it with my fingers, I decided it would be wiser to search for it through an abdominal incision. I completed the operation in the usual way, and then made a short incision in the abdominal wall near the pubes. As soon as I cut through the peritonæum my fingers almost immediately came into contact with the gauze sponge lying against the posterior aspect of the fundus. I was myself surprised to find the fundus so high up in the pelvis, reaching within an inch of the abdominal parietes. In a recent number of the *Centralblatt für Gynäkologie* I learn that Mackenrodt himself has discarded his former method of vaginal fixation for another, which he terms "vesicofixation." The reasons he assigns for the change of front are that without opening the peritoneal cavity he has been able to obtain only ninety per cent. of permanent cures, and that in order to obtain better results he would need to open the peritoneal cavity and bring about direct adhesion between the uterus and the vaginal walls. This adhesion would be so firm, he fears, that in case of pregnancy the same unfortunate results might obtain that occurred in a few of Dührssen's cases.

He had also observed some bladder disturbances in some of his cases. These are to be avoided by stitching the uterus to the peritonæum of the bladder. What ingenuity! What arguments! One scarcely believes that they were offered seriously. Any one who has closely followed the literature on the subject, and especially the polemic and bitter discussion between Dührssen, Winter, and Mackenrodt, may have an inkling of the motives that induced the latter to disinherit his firstborn in favor of his second offspring. The fact is that, although to Mackenrodt belongs the credit of practically carrying out Sänger's suggestion of stitching the uterus to the anterior vaginal wall, and of making a longitudinal instead of a transverse incision, his followers have outdistanced him in the improvements of the method. Winter operated exactly in accordance with his description and had numerous relapses. He then modified the technics much in the same manner as the writer has done, and had invariably good results. A similar experience was gained by Schauta * and several other operators.

Mackenrodt laid great stress upon obliterating the vesico-uterine space by catgut sutures. To this step, no doubt, must be attributed the bladder disturbances he has witnessed. I have paid no attention to this point, and my experience of the freedom from bladder symptoms in my patients bears evidence to the wisdom of this course.

The technics I now follow differs in some respects from that followed by all other operators. It differs from that of Mackenrodt as follows: 1. In that the peritonæum is always opened. 2. In that the fundus is drawn out through the incision. 3. In that the annexa are directly treated as they would be by the abdominal route. 4. In that no attention is paid to the vesico-uterine space. 5. In that the uterus is stitched directly to the vaginal wall.

It differs from that of Dührssen and his followers: 1. In that a longitudinal incision is always made. 2. In that the uterus is sutured at a point a little below the fundus. 3. In that the uterus is sutured to the vaginal wall near the urethral meatus.

The very good results, both anatomically and clinically, I have obtained by my modifications justify me in their continuance and in recommending them to the profession. That the operation is capable of being further improved can not be gainsaid. The one serious consideration regard-

* E. Wertheim. *Zur Technik der Vaginalen Fixation des Uterus.*

ing this method, and all others for fixing the uterus in a forward position, is the behavior of pregnancy and labor should conception take place. In ventrofixation it is not uncommon to have disturbances during gestation and labor, such as pain, abortion, bladder disturbances, and surgical interference.* The disturbances from Alexander's operation have probably been less than those from any other method, though some have been recorded from time to time.

In vaginofixation, if certain points are observed in the technics, there ought not to be any disturbances, as shown by my own three cases. Of course, I recognize the limitation of this experience. But quite a large number of cases have been reported abroad in which there was no trouble during gestation and labor. The literature on the subject, however, came to hand just as I was finishing this paper, and I have not had the time to analyze it thoroughly and incorporate it therein.

ON PYLORALGIA—SPASM OF THE PYLORUS.

By M. GROSS, M. D.

It is known that spastic contractions of the pylorus muscle may result not only from the irritation of a hyperacid gastric juice, but also in certain neuroses where there is a marked intolerance of acids, so that the mere introduction of a normal or even subnormal solution of hydrochloric acid may produce, in nervous persons, spastic contractions of the pylorus muscle. This may be the case also in Reichman's disease, so called, in which there is, as is well known, a continuous secretion of gastric juice containing a normal or excessive amount of hydrochloric acid.

Under certain conditions which can not always be determined, the contractions of the pylorus muscle, usually not felt by the patient, may become aggravated to violent paroxysms of pain. To such spastic contractions of the pylorus muscle, associated with severe pain, I apply the term pyloralgia, or spasm of the pylorus.

My first case, which occurred about three years ago, was that of a middle-aged woman, somewhat nervous but otherwise healthy, who stated that she had suffered for a number of years from painful attacks in the region of the stomach, which ceased at once after vomiting some strongly acid matters. These attacks occurred at irregular intervals, and she felt perfectly well in the mean time. The day before consulting me the woman had taken for supper, according to her own statement, a more than ample meal with an excellent appetite; during the night she experienced a disagreeable sensation in the region of the stomach; the next morning after breakfast the sensation increased to a violent pain. At 3 P. M., when I saw her, I noted the following condition: The region of the stomach was markedly distended and sensitive; the pain was most violent in the right hypochondrium at a spot situated between the parasternal and the mamillary lines. The liver, which was apparently normal, was not sensitive, but when I pressed against the antrum of the pylorus the pain became intense. The pit of the stomach was not sensitive; the gall bladder could not be felt on palpation. Owing to the backward radiation of the pain, I found to the *right* of the spinal column a very sensitive spot corresponding to the eleventh and twelfth dorsal vertebræ.

From time to time the patient ejected small quantities of a rather turbid fluid which had an acid odor and blunted the teeth, but she did not vomit. The urine had been retained since the previous night. After introducing the tube the woman vomited a remarkably large quantity of a turbid fluid having a strong odor of butter and acetic acid and evidently containing the almost undigested food of the preceding day. The fluid had a total acidity of 130, and contained hydrochloric acid in excess. A subsequent lavage with lukewarm water soon relieved the patient.

The following is my explanation of the pyloralgia—for it could be nothing else—in this case: The stomach is making supreme efforts to propel the abnormally large amount of food toward the pylorus, and at first with fair success. Soon, however, the increased demands made upon the pyloric portion lead to a greater activity and to an overstimulation of the pylorus muscle, and the latter, instead of opening as under normal conditions at certain intervals, contracts more and more. The painful spastic contraction—pyloralgia—is increased by, or depends at least in part upon, the occurrence of an augmented gastric secretion, which latter is the expression of an overstimulation by the food remaining a longer time in the stomach.

In the above-given case there was not only a spastic contraction, but also one of those paralyses of the stomach muscle which develop in a short time, as is sufficiently shown by the retention of urine and the impossibility of vomiting spontaneously. This paralysis was caused by the overburdening and overexertion of the muscles of the stomach. The extraordinary quantity of fluid ejected indicates a transfusion of liquid into the cavity of the organ. After relieving the wall of the stomach restitution occurs rapidly in such cases. When I saw the patient again at eight o'clock in the evening she was just beginning to eat a ham sandwich with a good appetite in defiance of my directions.

The group of symptoms of spasm of the pylorus described above is so characteristic, at least in typical cases, that it needs but be recalled to be diagnosticated. Frequently, however, we may be forced to exclude some diseases which present similar symptoms. These are *gastroxynsis* (Rossbach), occurring in neurotic and tabetic subjects, and the so-called *gastric crises*. We must search for any initial symptoms of tabes; furthermore, the pains radiate rather downward and into the left hypochondrium, and there will also be copious vomiting for several days and longer. In *cardialgias*, on the other hand, the most violent pains are more to the left in the pit of the stomach, and radiate to the *left* of the spinal column; painful points will be found accordingly behind, to the left of the spine, at the level of the ninth to the eleventh dorsal vertebræ.

Confusion with typical *ulcer* is impossible; in the latter

* E. Wertheim (*Centrbl. für Gyn.*, 1896, No. 2) cites Miländer (*Zeitsch. für Geburtsh. und Gynäk.*, Bd. xxxiii, Heft 3), who investigated fifty-four cases of full-term labor after ventrofixation. In four cases the use of the forceps was necessary; in four, version had to be done; in two, Cæsarean section had to be resorted to; and in one extraction (*sic!*) was employed.

the pain depends upon the ingestion of food, and recurs every day, often for weeks and months. A patient affected with gastric ulcer certainly could not with impunity take solid food a few hours after the attack.

In *intercostal neuralgia* the course must be borne in mind, and eventually pressure points should be looked for.

In *renal colic* the pain radiates along the ureter toward the testicle and the glans penis. The urine should be examined for mucus, blood, or concretions.

The paroxysms described as *gastralgia* frequently are not gastralgias in the true sense of the word. Often they are the above-mentioned gastric crises, or the gastroxynsis described by Rossbach, often merely cardialgia or pyloralgia. In another series of cases we have to deal, in my opinion, with affections of the solar ganglion—persistent pain at the back radiating forward. We observe the occurrence of gastralgia only in hysterical persons, by whom the seat of the pain is given as very variable and radiating in all directions. External pressure even arrests the pain in some cases. The paroxysms are often associated with bulimia and globus hystericus.

Finally, as regards *cholelithiasis*, typical attacks will always be readily distinguished from pyloralgia. A cholelithiasis without icterus and without the passage of stones is mentioned; it is said that in such cases the moving stone had fallen back into the gall bladder, etc. Mention has also been made of spastic contractions of the biliary passages and the bile ducts in consequence of their catarrhal inflammation; on the other hand, we know that often enough at an autopsy the gall bladder is found filled with stones, without any symptoms of cholelithiasis having been present during life. Furthermore, it has been said that an increased secretion of hydrochloric acid has been found in cholelithiasis which was due to reflex causes. In two cases I have examined the ejected matters immediately after the attack in the vain hope of finding an increased secretion of hydrochloric acid; still the possibility exists, at least theoretically.

Taking all this into consideration, we must observe that in attacks resembling gallstone colic, when they occur *invariably* without icterus and without the passage of calculi, pyloralgia should always be thought of, and in such cases the hyperchlorhydria should be looked upon as the causal factor.

It is not only the abnormal quantity and quality and their consequences which may give rise to pyloralgia, but also passion, fright, anger, and sexual excitement soon after a meal or during its digestion, may, under the conditions stated, provoke similar attacks. Even abnormal fermentations may act in the same way.

In this connection I wish to express the idea that it is precisely the above-named painless or painful contractions of the pylorus muscle which may become the starting point of the well-known benign hypertrophies of that muscle.

The indication is plain that, in cases presenting the symptom-complex described above, pyloralgia should always be borne in mind, and we should govern ourselves accordingly with reference to the prognosis and treatment.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. APPLETON & Co.
Edited by FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, MARCH 7, 1896.

THE STUDY OF DISEASES OF THE STOMACH.

In the *Journal* for February 22d we published an abstract of one of the Jefferson Lectures lately given in Philadelphia by Dr. Fenton B. Turck, of Chicago, by invitation of the faculty of the Jefferson Medical College. The lectures covered a wide field of investigation in the ætiology, pathology, and bacteriology of diseases of the stomach. Dr. Turck presented his various methods of investigations and treatment very fully. His methods of diagnosis are marked by their originality and their apparent accuracy.

It appears that the gyromele, an instrument devised by him a few years ago and first demonstrated before the International Medical Congress held in Rome in 1894, besides being serviceable for purposes of diagnosis, is of importance in the treatment of disease. In connection with it a report of 223 cases of gastritis glandularis is given, with the results of treatment. The report shows that 128 cases had been treated exclusively by the use of the instrument, that 90 patients had been cured in from four to eight weeks of treatment, and that the rest had been improved. A description of the improved gyromele was published in the *Journal* for February 8th.

To show the outline of the greater curvature, says Dr. Turck, a tube containing a cable with a sponge at its extremity is introduced into the stomach. An apparatus for producing revolutions is attached to the outer end of the cable. The cable is passed onward and it glides along the great curvature, plainly showing the outline of the stomach. Moving onward, the cable passes upward toward the pylorus, and then turns and passes along the lesser curvature. When rapid revolutions are produced the sponge and cable can be felt in their respective situations. To determine the distensibility of the stomach, cables of different degrees of flexibility are used. A very flexible cable (No. 1) is used first. It is introduced until it meets with resistance at the lesser curvature, and its length is noted. At the same time the revolving sponge is examined by palpation through the abdominal wall. A stiffer cable (No. 2) is then used, and pushed onward, until it meets with resistance at the lesser curvature, and its length is noted. The lengths are compared, and their difference shows the degree of distensibility. The degree of distention also is found by palpation through the abdominal wall. Together with this, bacteriological and microscopical examinations may be made of the material that adheres to the sponge. Microscopic preparations are made, stained and unstained, and different culture media, such as

agar-agar, gelatin, potato, milk, bouillon, and the mucous membrane of the stomach of the pig, are inoculated with the material that has been removed from the wall of the stomach. Conditions that are favorable to the growth of the various kinds of bacteria are observed and studied.

With the new improved gyromele the revolutions of the sponge are plainly to be felt through the abdominal wall as the instrument glides to the right and upward to the pylorus along the lesser curvature; it can be felt even behind the liver. This, Dr. Turck holds, aids very materially in the diagnosis of the size of the stomach. Gastroptosis, or prolapsus, also is readily determined, for if the sponge is felt below the border of the liver as it curves around at the lesser curvature, it indicates gastroptosis. The degree of enlargement transversely as well as vertically is accurately determined. This is very important and the evidence is positive, as has been clearly demonstrated on the cadaver and in laparotomy, where the vibrations could be seen as well as felt. In thin subjects the instrument can be observed even through the abdominal wall, and the cable can easily be grasped within the hand. Even through a thick abdominal wall the vibrations may be felt.

This rapidly revolving sponge, as it follows the outline of the stomach, instead of rubbing off mucus, seems to "wind" it off. The thick material found on the wall in gastritis is thus readily removed, and that which does not adhere to the sponge is left loose in the cavity of the stomach. So adherent and gluelike is this mucus that lavage with alkaline material does not remove it. It is observed in post-mortem examinations that it is most difficult to remove the sticky material. Direct medication, as by the use of antiseptic solutions, may readily be employed. Dr. Turck thinks it is not the rubbing or massage effect of this revolving instrument that produces the marked stimulating effect, but the vibratory action of the revolving sponge and flexible shaft, which stimulates the vascular area of the whole surface as well as the muscle cells and produces the same effects as vibratory exercise of the voluntary muscles of the body. He shows that under the vibratory effects of the gyromele some persons with decided dilatation soon acquired better *motor power*, improved churning and peristaltic movements, so that the stomach is able to grind the food and empty its contents through the pylorus into the duodenum within the normal limit of time. Where electrization of the stomach from within is indicated, not a part only of the organ is reached, but the entire organ, for the sponge electrode traverses the whole surface.

Another peculiar apparatus is what Dr. Turck calls the "stomach needle-douche," which he first used in 1894, but did not demonstrate to the profession in this country until May, 1895, at the meeting of the American Medical Association. Two tubes of different calibre are attached to each other side by side. One reaches to the cardiac extremity only. The other, larger and longer, reaches to the bottom of the stomach—the greater curvature. For the purpose of producing a shower on the wall of the organ, a small perforated ball is attached to the end of the smaller tube that reaches to the cardia, and through it forced irrigation is used by means of pressure. In place of the perforated bulb, small holes may be made along the lower end of the tube, which ends in a blind extremity. The ball attachment has the advantage that it can be removed, so that the double tube may be used without the shower, a nebulizer being employed instead. Moreover, it can be cleaned more readily after use. Either form of the instrument may be used, the principal thing being the effect of forced irrigation, forming a shower-bath inside the stomach. At the meeting of the American Medical Association of which mention has already been made Dr. Turck demonstrated its use with the alternate employment of hot and cold water forced through the small tube under pressure by simply connecting the irrigator with a force-pump. The object of the force-pump is to compress the air in the irrigator and force the water through the tubes, and thus produce a shower-bath for the stomach. Instead of using a force-pump to compress the air, Dr. Turck has demonstrated the force-irrigator by the use of simple rubber bulbs like an atomizer bulb. By compressing the air within the bottle enough pressure may be produced to make a fine shower of considerable force, although not so much as when the force-pump is employed. The use of the irrigator with the bulb instead of a force-pump makes the apparatus comparatively inexpensive. The forced shower-bath is used not only for the purpose of cleansing the stomach by rapidly removing the adherent material, but as a powerful vaso-motor and muscular stimulant, especially when employed with hot and cold water alternately.

The object of this treatment is to stimulate the wall of the stomach by the force of the spray acting as a "rain-bath," and at the same time to remove the morbid material without overdistending the stomach with water, which is such an objection to the ordinary method of lavage.

MINOR PARAGRAPHS.

THE MODERN GREEK LANGUAGE.

In connection with Dr. Achilles Rose's persevering advocacy of modern Greek in the construction of scientific nomenclature, if not as the international language of science, it is of interest to note that, according to the European edition of the *New York Herald*, the French Minister of Public Instruction has charged a special commission of eminent philologists with investigating the means of substituting for the pronunciation of Greek how taught in the French schools that of modern Greek. So the announcement reads, but perhaps it is the expediency of such a substitution that is to be inquired into.

THE HOUSTON STREET "HOT SPRING."

Some of the people who are always on the watch for a new "cure"—something to make them well if they are ailing, to make them better if they are well—have lately had a lesson that ought to prove wholesome. A "hot spring," it was

thought, had been found in East Houston Street, and the assumption was at once made by these persons that "the waters" were medicinal. But the health authorities very properly interdicted the drinking of the water until an examination as to its potability could be made, and such an examination has shown that the water is highly contaminated with sewage, and probably derives its heat from neighboring steam pipes.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending March 3, 1896:

DISEASES.	Week ending Feb. 25.		Week ending Mar. 3.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	14	4	4	5
Scarlet fever	112	13	130	18
Cerebro-spinal meningitis	2	2	2	1
Measles	479	22	523	24
Diphtheria	250	40	254	56
Small-pox	0	0	0	0
Tuberculosis	66	126	143	106

St. Mary's Hospital, Philadelphia.—We are informed that Dr. William Hamilton has resigned the office of resident physician.

Society Meetings for the Coming Week:

Monday, *March 9th:* New York Academy of Medicine (Section in General Surgery); New York Ophthalmological Society (private); New York Medico-historical Society (private); New York Academy of Sciences (Section in Chemistry and Technology); Lenox Medical and Surgical Society, New York (private); Microscopical Club of the Buffalo Society of Natural Sciences; Boston Society for Medical Improvement; Gynæcological Society of Boston; Maine Academy of Medicine (Portland); Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private).

Tuesday, *March 10th:* New York Academy of Medicine (Section in Genito-urinary Surgery); New York Medical Union (private); Kings County, N. Y., Medical Association; Medical Societies of the Counties of Ulster (quarterly) and Rensselaer, N. Y.; Newark (private) and Trenton, N. J., Medical Associations; Clinical Society of the Elizabeth, N. J., General Hospital and Dispensary; Northwestern Medical Society of Philadelphia; Practitioners' Club, Richmond, Ky.

Wednesday, *March 11th:* New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Medical Societies of the Counties of Albany and Montgomery (quarterly), N. Y.; Philadelphia County Medical Society; Pittsfield, Mass., Medical Association (private); Worcester, Mass., District Medical Society (Worcester).

Thursday, *March 12th:* New York Academy of Medicine (Section in Obstetrics and Gynæcology); New York Orthopædic Society; Brooklyn Pathological Society; Medical Society of the County of Cortlandt (quarterly), N. Y.; Roxbury, Mass., Society for Medical Improvement (private); Pathological Society of Philadelphia; Cleveland Medical Society.

Friday, *March 13th:* Yorkville Medical Association (private), New York; Brooklyn Dermatological and Genito-urinary Society (private); German Medical Society of Brooklyn; Medical Society of the Town of Saugerties, N. Y.

Saturday, *March 14th:* Obstetrical Society of Boston (private).

Book Notices.

The American Year-book of Medicine and Surgery. Being a Yearly Digest of Scientific Progress and Authoritative Opinion in all Branches of Medicine and Surgery drawn from Journals, Monographs, and Text-books of the Leading American and Foreign Authors and Investigators. Collected and arranged with Critical Editorial Comments by J. M. Baldy, M. D., C. H. Burnett, M. D., Archibald Church, M. D., C. F. Clarke, M. D., J. Chalmers DaCosta, M. D., W. A. N. Dorland, M. D., V. P. Gibney, M. D., Homer W. Gibney, M. D., Henry A. Griffin, M. D., John Guitéras, M. D., C. A. Hamann, M. D., H. F. Hansell, M. D., W. A. Hardaway, M. D., T. M. Hardie, B. A., M. B., C. F. Hersman, M. D., B. C. Hirst, M. D., E. Fletcher Ingals, M. D., W. W. Keen, M. D., H. Leffmann, M. D., V. H. Norrie, M. D., H. J. Patrick, M. D., William Pepper, M. D., D. Riesman, M. D., Louis Starr, M. D., Alfred Stengel, M. D., N. G. Stewart, M. D., and Thompson S. Westcott, M. D., under the General Editorial Charge of George M. Gould, M. D. Profusely illustrated with Numerous Woodcuts in Text and Thirty-three Handsome Half-tone and Colored Plates. Philadelphia: W. B. Saunders, 1896. Pp. vi–17 to 1183. [Price, $6.50.]

At the present time medical literature is so voluminous that it is impossible for the student, the general practitioner, or the specialist to cover even the restricted field of investigation he may be interested in. The result of this condition is the year-book, the most important perhaps of all publications for the dissemination of medical knowledge. But few attempts have been made to supply such a want, and we can congratulate the editors of this volume upon the success which has attended their labors. It is not a complete bibliography, a mere collection of individual opinions, or a literary review of all published matter. The aim has been to mention only those things which are or may be contributory to the progress of medical science and art. In a comprehensive work of this character some omissions may appear, and matter which seems of little importance may creep in, but facts of significance, with very few exceptions, have received due consideration.

The book is divided into sixteen sections, as detailed below, each ably edited, and with a good text and a good arrangement we find it readable from beginning to end. We can not commend either the paper or the binding, and a two-volume issue might have been more satisfactory. Many of the plates are good, but the woodcuts, while answering all illustrative purposes, are not above the average of such productions. We note many innovations in orthography for which the editor-in-chief takes the responsibility. The most noticeable, perhaps, is the disappearance of the diphthong in such words as, edema, anemia, hemoglobin, etc. It is a question whether such changes are advisable. Chloride, bromide, iodine, and similar words lose their final e. Hyphens are studiously avoided.

The section on general medicine is by Dr. William Pepper and Dr. Alfred Stengel, of Philadelphia. After reading the one hundred and forty-five pages devoted to this section we are impressed with the fact that, in spite of numerous contri-

butions to statistical, experimental, and theoretical knowledge, material progress in medical therapeutics is exceedingly slow. While the value of the cold-water treatment in typhoid fever is undoubted, it must be used discriminatingly and not as a matter of routine. Yeo advocates attention to intestinal antisepsis. Treatment directed toward this object is certainly rational, and more satisfactory results may follow further experimentation. No mention is made of the "Woodbridge" treatment, carried out on these lines. A number of pages are taken up with the consideration of diseases of the blood and of the ductless glands, a more important field for active work at present perhaps than any other in medicine. Meinert and Taylor hold that chlorosis is a secondary condition, and that there is an underlying nervous disorder. Some excellent results are reported from the use of bone marrow in anæmia, both simple and pernicious, and even in leucæmia. There appears a growing tendency to substitute organic for inorganic preparations of iron, and to ascertain what influence climate, altitude, bathing, massage, etc., may have in the treatment of blood diseases. Evidence regarding the infectious character of acute articular rheumatism seems to accumulate, and some observers regard the tonsils as the portals of entrance of the infectious agent. Pennell thinks that the influence of chronic rheumatism in producing heart lesions has been underestimated. A reference is made to intestinal intoxication, a subject which we believe offers opportunities for valuable research.

The section on general surgery is by Dr. W. W. Keen and Dr. John Chalmers DaCosta, of Philadelphia. The details of an extremely radical operation for the cure of carcinoma of the breast, by Halsted, are given with excellent results. In regard to the treatment of "inoperable" malignant tumors with the toxines of erysipelas and the *Bacillus prodigiosus*, we conclude from the observations of Coley and others that their curative action is an established fact, that this action is much more powerful in sarcoma than in carcinoma, and that their administration requires caution. Coley gives thirty-eight cases of "inoperable" sarcoma with a promise of nine cures. Surgeons are still at variance in respect to the time for operative interference in cases of inflammation of the vermiform appendix, and as to the operation itself, but they all agree that there is no medical point of view. A number of operations for the radical cure of hernia are given, and the editor, from the records of results, considers those of Bassini and Halsted to be the best. The mechanical and non-mechanical means of intestinal approximation have their advocates and, of the former, Murphy's button seems to be most generally approved.

In intracranial surgery, Bramwell concludes that in a few cases of tumor brilliant results may be obtained, but that these cases are very rare. Operative statistics lead us to the same conclusion. A very interesting subdivision is devoted to anæsthetics.

The section on obstetrics is by Dr. Barton Cooke Hirst and Dr. W. A. Newman Dorland, of Philadelphia. As a preface to this section we find a very pertinent discussion of the methods of obstetrical instruction. It is a well-known fact that medical students are often deficient in a practical knowledge of obstetrics. Markoe and Lambert say that the vast majority of diseases of women follow parturition as complications or sequelæ, and offer an ardent plea for an early and radical improvement in the methods of obstetric teaching. They outline an ideal course worthy of consideration. Symphysiotomy is presented as an established operation, but the exact dividing line between the absolute indications for this and those for the Cæsarean section is not positively defined. The subject of extra-uterine pregnancy is illustrated with many peculiar and interesting cases.

The section on gynæcology is by Dr. J. M. Baldy and Dr. W. A. N. Dorland, of Philadelphia. The following editorial note shows that enthusiasm is being replaced by rational and conservative methods in the treatment of diseases of the appendages: "The profession at large is awakening to the fact that a very large proportion of tubes and ovaries are annually uselessly sacrificed either to an absolute inability on the part of the operator to recognize the true condition that is present, or a culpable neglect on his part to accomplish an absolute diagnosis." Nearly a hundred pages are devoted to this section.

The section on pædiatrics is by Dr. Louis Starr and Dr. Thompson S. Westcott, of Philadelphia. Seibert has found that simple filtration of milk through a half-inch layer of compressed absorbent cotton is an efficient means of removing a very large proportion of the contained bacteria. In view of the popularity of milk sterilization, we commend the following conclusion to the reader: "At the same time, sterilization, like every other method of preparing infants' food, can not from a clinical standpoint be regarded as universally applicable. A certain small proportion of cases [infants?] will be encountered that do not thrive on sterilized milk, and show its lack of nutritive properties or difficulty of assimilation by drifting into a condition of simple atrophy or infantile scurvy from which they rapidly recover upon the same milk mixtures, either pasteurized or untreated by heat." Eighteen pages are devoted to diphtheria and antitoxine, and, while evidence of the practical value of the latter for immunization and treatment is considered to be accumulating, its exact position as a therapeutic agent is not determined.

The section on nervous and mental diseases is by Dr. Archibald Church and Dr. Hugh T. Patrick, of Chicago. In a paper on the Mental Diseases of Children and Youth, Hurd says: "In conclusion, permit me to add the conviction that I shall be remiss in professional duty if I do not urge upon you as medical men to call a halt in the present high-pressure educational methods in vogue in our primary schools." We think it is time that the physician took more than a passing interest in this important question. How many of us know anything about what is required of the children in our schools? Various neuroses occupy a number of pages, and a *résumé* of an excellent paper on the diagnosis of brain tumors deserves mention.

The section on dermatology and syphilis is by Dr. W. A. Hardaway and Dr. C. F. Hersman, of St. Louis. An interesting fact has been noted by Musser, that in his hospital experience there has been a diminution in the number of cases of syphilis, notwithstanding an increase in population, that it is at present a mild disease, and that tertiary and visceral manifestations are rare. Can other observers indorse this view? A very important part of this section, containing a number of formulæ, is devoted to therapeutics. Pathology, bacteriology, and histology in relation to skin diseases are fully considered.

The section on orthopædic surgery is by Dr. V. P. Gibney and Dr. H. W. Gibney, of New York. We note here a reference to a neglected but valuable germicide in tuberculous diseases of the bones and joints. The results of the use of sulphur by W. Arbuthnot Lane have apparently received but little attention. This seems somewhat remarkable, for after considering his investigations, covering two years, we are impressed with their importance. We can cite a conclusion not here mentioned: "I have never been obliged to amputate for tuberculous disease, and I trust that by the use of

this powerful remedy amputations for tuberculous disease will not be required in the future."

The section on ophthalmology is by Dr. Howard Forde Hansell, of Philadelphia, and Dr. C. Frank Clark, of Columbus, Ohio. "The value of the study of the eye in relation to general diseases," they say, "can not be overestimated." We agree to this fully and commend the pages that follow to the general practitioner as well as the specialist; also those on the therapeutics of the eye.

The section on otology is by Dr. Charles H. Burnett, of Philadelphia. This section is prefaced by the remark that it has been prepared for the general physician, and that only articles of the greatest practical value in otology are considered. Those containing nothing new have been omitted, except in a few instances where errors are corrected.

The section on diseases of the nose and larynx is by Dr. E. Fletcher Ingals and Dr. T. Melville Hardie, of Chicago. The use of thyreoid extract in goître is commented upon in various parts of this work; here the conclusion is that a few cases can be cured and in many the symptoms ameliorated. In view of the results of investigation this seems probable. Intubation is fully discussed.

The section on pathology is by Dr. John Guitéras and Dr. David Riesman, of Philadelphia. A full review of investigations in regard to the blood, the gastro-intestinal tract, and toxines, antitoxines, and serum therapy is given. The ætiology of uræmia is considered still obscure. Hughes and Carter say that it is due to a poison circulating in the blood, and not dependent on the retention of urine or its constituents. The topographical studies of Curschmann on the position, form, and size of the large intestine have a direct bearing on diagnosis, especially in regard to disease of the vermiform appendix. Prudden shows that the injection of pure cultures of the tubercle bacillus produces consolidation, rarely cavities, and a subsequent injection of the *Streptococcus pyogenes* results in cavities in a large proportion of lungs. This explains the beneficial effects of open air and so-called antiseptic treatment.

The section on materia medica, experimental therapeutics, and pharmacology is by Dr. Henry A. Griffin and Dr. V. H. Norrie, of New York. This section gives a very satisfactory review of the results of recent investigations in regard to old remedies and the practical value of recent additions. The yearly "crop" of new drugs is a bountiful one, and we are perfectly aware of the fact that most of them will eventually be found wanting. At the same time we think even these should receive a few explanatory words in a year-book. Hence we note omissions of bromalin, salophen, salipyrine, uropherin, urotropine, ammonol, apolysin, nosophen, endoxine, and antinosine. Practically, however, the article is complete, and gives all the important advances of the year in respect to drugs and therapeutics.

The conclusions of Cerna, from a study of alcohol, seem to represent the actual facts as to this much-discussed subject. Apocynum cannabinum (inaccurately "cannabium" in the text) in the form of the tincture has proved a valuable diuretic in valvular disease of the heart. Chloral hydrate is justly recommended as an important vaso-dilator. Digitoxin has been found by Masius to be a glucoside of uniform strength and the best digitalis preparation for medicinal use. From its reported harmless character and powerful action we should think formaldehyde might prove a very useful medium for sterilizing instruments. Here, again, we find the administration of organic preparations of iron advocated in preference to that of the inorganic. Nuclein is brought forward as a therapeutic agent to increase the germicidal properties of the blood and neutralize the poisons of infectious diseases. As yet its value is undetermined. Additional evidence shows that the administration of sulphonal is not always devoid of harmful results. The effect of injections of a glycerol extract of the kidney substance in albuminuria has been investigated by Teisser and Fränkel, and they have found that during its use albumin disappears and the patients experience a feeling of general relief. Thiol is suggested as a satisfactory substitute for ichthyol, without the disagreeable properties of the latter.

The section on anatomy is by Dr. C. A. Hamann, of Cleveland; that on physiology, by Dr. G. N. Stewart, of Cleveland; and that on hygiene and sanitary chemistry, medical jurisprudence, and clinical chemistry, by Dr. Henry Leffmann, of Philadelphia. So many diseases have been ascribed to sewer air that we are relieved to find that investigation shows that specific diseases are not likely to be conveyed through house drains. At the same time, dangerous gases may act as irritants in some cases. Among other subjects considered are the filtration of water supplies and adulterations of milk, bread, and butter, all of the utmost importance in regard to the health of communities in general. Dr. Max Nordau and Professor Lombroso receive some attention.

Traitement des rétrécissements par l'électrolyse linéaire. Par le Dr. J. A. Fort, professeur libre d'anatomie à l'École pratique de la Faculté de médecine de Paris, etc. Paris: G. Masson, 1894. Pp. v–4 to 553.

This work of Dr. Fort's received mention in the *Journal* at the time of his recent visit to New York. During that visit he operated on a number of patients in the presence of several genito-urinary surgeons, to the evident satisfaction of the patients and the surgeons. The operation of linear electrolysis, the instruments and technics of which are described in the book under review, is applicable, according to the author, to all strictures of the urethra. A difference of opinion seems to exist as to its value in dense stenoses of the deeper parts of the urethra; but it appears to be generally agreed that it is a harmless measure, quite free from dangers of sepsis and hæmorrhage, in annular and "bridle" strictures. The author insists, of course, upon strict asepsis and upon subsequent dilatation with olive-pointed bougies up to No. 24 of the French scale. In his book M. Fort gives reports of cases of operation by this method which show apparently glowing results. The second part of the book is devoted to a consideration of linear electrolysis for cicatricial, organic, and fibrous strictures of the œsophagus. The author professes to have cured some, to have relieved the symptoms in others, and to have failed in still others. Cicatricial and fibrous strictures seem to have yielded the best results.

The book is well made up, is full of interesting reading, and will prove a necessity to every surgeon if the method is shown, after the lapse of a little more time, to have true merit.

The Functional Examination of the Eye. By John Herbert Claiborne, Jr., M. D., Instructor of Ophthalmology in the College of Physicians and Surgeons, New York, etc. With Twenty-one Illustrations. Philadelphia: The Edwards & Docker Company, 1895. Pp. 9 to 96. [Price, $1.]

The author of this little book does not profess for it anything more than an easy manner of stating a subject often, he declares, confused in other books. But refraction is satisfactorily treated of by such authors as Hartridge, Nettleship, Noyes, and many others. The title of Dr. Claiborne's book is

a misnomer; the expression "functional examination of the eye" covers a much larger field than refraction and the subjective method of examination, which are all that is dealt with here. The book is evidently intended for students who are gaining their smattering of ophthalmology; it can not long satisfy those who seek a special knowledge. The simplicity which the author alleges for it is gained by being superficial rather than by being lucid.

It is a pity that such books are needed. A medical student who can not understand the mechanism of refraction without having it so reduced is not fit to undertake the harder burdens which must fall to his lot. There are numerous typographical errors and the style leaves something to be desired.

BOOKS, ETC., RECEIVED.

Atlas of Traumatic Fractures and Luxations, with a Brief Treatise. By H. Helferich, M. D., Professor at the University of Greifswald. With One Hundred and Sixty-six Illustrations after Original Drawings by Dr. Joseph Trumpp. New York: William Wood & Co., 1896. Pp. xvi–142.

A Text-book upon the Pathogenic Bacteria for Students of Medicine and Physicians. By Joseph McFarland, M. D., Demonstrator of Pathological Histology and Lecturer on Bacteriology in the Medical Department of the University of Pennsylvania, etc. With One Hundred and Thirteen Illustrations. Philadelphia: W. B. Saunders, 1896. Pp. 12 to 359. [Price, $2.50.]

A Treatise on the Medical and Surgical Diseases of Infancy and Childhood. By J. Lewis Smith, M. D., Clinical Professor of Diseases of Children, Bellevue Hospital Medical College, etc. Eighth Edition, thoroughly revised and greatly enlarged. With Two Hundred and Seventy-three Illustrations and Four Plates. New York and Philadelphia: Lea Brothers & Co., 1896. Pp. xiii–17 to 987. [Price, $4.50.]

Transactions of the American Microscopical Society. January, 1896. Eighteenth Annual Meeting, held at Cornell University, Ithaca, N. Y., on August 21, 22, and 23, 1895. Volume XVII.

Report of the Commissioner of Education for the Year 1892–'93. Volume II, containing Parts III and IV.

Twenty-first Annual Report of the Secretary of the State Board of Health of the State of Michigan for the Fiscal Year ending June 30, 1893.

Seventh Annual Report of the Babies' Hospital of the City of New York, for the Twelve Months ending October 1, 1895.

State Hospitals Bulletin. State of New York. January, 1896.

Thirtieth Annual Report of the St. Francis Hospital, New York. For the Year ending December 31, 1895.

Reports of the Trustees and Superintendent of the Butler Hospital for the Insane.

Fourteenth Annual Report of the Hospital for Women and Children, Newark, N. J. December, 1895.

Report of the Scientific Study of the Mental and Psychical Conditions of Childhood. With Particular Reference to Children of Defective Constitution, and with Recommendations as to Education and Training. London: Published by the Committee on the Mental and Psychical Condition of Children.

The Diagnosis of Changes in the Size, Position, and Motility of the Stomach in Cases where Intragastric Instruments can not be Used. By Boardman Reed, M. D., Atlantic, N. J. [Reprinted from the *Medical News.*]

The Axis Traction Forceps. By Maris Gibson, M. D., Wilkesbarre, Pa. [Reprinted from the *Transactions of the Luzerne County Medical Society.*]

Nomenclature of Colors for Bacteriologists. By E. B. Shuttleworth, M. D., Toronto, Canada. [Reprinted from the *Journal of the American Public Health Association.*]

Laboratory Notes on the Bacteriology of Diphtheria. By E. B. Shuttleworth, M. D. [Reprinted from the *Lancet.*]

The Open-air Treatment of Pulmonary Tuberculosis. By Julia W. Carpenter, M. D., Cincinnati, Ohio. [Reprinted from the *Cincinnati Lancet-Clinic.*]

The Sensory Nervous System in Diagnosis. By C. H. Hughes, M. D., St. Louis. [Reprinted from the *Alienist and Neurologist.*]

The Necessity of Complete Extirpation of Tumors and the Importance of Rapid Cicatrization of the Wound. By Frederick H. Wiggin, M. D.

Cholera in Calcutta in 1894. [Reprinted from the *Health Officer's Annual Report.*]

Miscellany.

Yeast Nuclein in the Treatment of Hip-joint Disease.—In the *American Lancet* for January, 1895, Dr. Charles W. Hitchcock, of Detroit, remarks that not all cases of hip disease are, with any fair promise of success, amenable to conservative treatment. Cases long neglected, in which erosion of the joint structures has already occurred, together with suppuration and resulting fistulæ, are not encouraging instances for non-operative measures. An early diagnosis is of the utmost importance, that the case may be taken in hand before gross and irreparable damage has placed it beyond the reach of any save the most heroic treatment.

The nucleins, says Dr. Hitchcock, are among the newer remedies that may do much as an aid to tissue-building, more especially as they are said to influence cell metabolism so as to bring about a healthy resistance to disease processes.

The germicidal properties of nuclein, he continues, have been demonstrated, and Vaughan and McClintock have shown that the germicidal constituent of blood serum is a nuclein. Parke, Davis, & Co., he says, have rendered yeast nuclein accessible to the profession. They make it for Dr. Vaughan and according to his formula; the solution which they supply is about a one-per-cent. solution. Of this solution of yeast nuclein, from five to sixty minims may be administered at a time. The dose may be increased gradually and cautiously from the initial dose (which may appropriately be about ten minims), regard being had to the febrile reactions, which may be decidedly marked and are to be looked out for.

He then gives the following report of a case: "March 30, 1894, I first saw Miss L. C., aged twenty years, of English parentage and in this country only about two years. She is one of a family of six children. One sister died at ten months, and one sister, aged nineteen years, has of late had what is reported by letters from her home as 'dropsy of the knees.' The father and mother are both living and are healthy, so far as I can learn. One maternal aunt died of consumption. The patient herself is of medium size, rather rosy complexion, and somewhat delicate in appearance. The young lady gives a history of having been always well until December, 1890, when she fell on a sidewalk and struck on the left hip. The following month she fell on the ice on the same hip, which, she says, 'has seemed weak' ever since this second fall, though she was able to be about as usual and tried to persuade herself that she had no serious trouble. She went to the World's Fair in the fall of 1893, and each day's

sight-seeing tired her greatly. Her left knee would pain her at night and the hip would ache; but she would not give up to it. Later, after her return home, her hip began to pain her intensely after every walk. The first pain was in the knee, and more or less still continued there, but the hip now grew so exquisitely sensitive and painful that all use of the leg had to be given up, and for three weeks before I saw her (March 30th) she had not walked at all. She was obliged to lie on the back or right side, and I found the left leg well flexed and adducted. Any attempted passive movement of the leg seemed to give great pain, and the whole region about the hip joint was so sensitive that even the lightest pressure of the finger could scarcely be borne, though at the same time the sensitive area presented nothing on inspection to attract notice. Any attempt, with the patient on her back, to extend the leg quickly caused an arching of the pelvis to correspond to what little extension could be endured.

"Removal to the Harper Hospital was proposed and consented to. She endured the ride of two miles in the ambulance very well, and was admitted between 5 and 6 P. M., March 30th, with a temperature of 99·6° F. and a pulse of 80. Lead-and-opium stupes were applied to the region of the sensitive joint, and under their use the acute tenderness so subsided that on April 3d, by careful manipulation, we applied a simple Buck's extension, the plaster being applied the whole length of the thigh and leg. This was kept up for several weeks and with quite a heavy weight, greatly to the relief of the patient, pain gradually disappearing from the direct region of the joint, being longest complained of through the groin.

"June 1st I applied a plaster-of-Paris cast enveloping the entire left leg from the ankle up, and extending around the pelvis. An extra sole of about an inch and a half in thickness was now applied to the sole of the right foot, crutches were secured, and the patient was encouraged to be up and about. She soon began to walk some each day, but the weight of the cast annoyed her and its pressure about the pelvis irritated her (though it really fitted very well), and she found a semi-reclining position in a wheel-chair much more comfortable than the erect position. The cast had been relied on to make necessary extension, but now became somewhat loose and was removed on June 27th. Two days later a Buck's extension was again applied. The patient had not borne the confinement to bed and hospital well; she did not eat or sleep well, and was getting thin, although the hip was now very comfortable. She therefore decided to leave the hospital, which she did on July 6th.

"On July 4th, under chloroform, I injected from two to four drachms of a ten-per-cent. iodoform emulsion into the joint cavity. I took this opportunity to completely flex the leg on the thigh and the thigh on the body. There was no adhesion or resistance in either joint, and no feeling as of erosion or thickening about the hip joint. During her stay in the hospital the temperature varied from normal to 100°, but the most of the time between normal and 99·2°. The pulse varied from 76 to 110. Malt, hypophosphites, cod-liver oil, and other remedies had been given, but had not been well borne.

"At home she was for a short time kept in bed, with extension, but soon she tired of this and insisted on being up and about on her crutches. She improved somewhat in appetite and felt much better, but still slept poorly. She had no pain in the hip, and took several long walks and rides in the street-cars. She presumed too much upon her ability to do, however, so that restrictions were necessary. Extension hardly seemed called for, but I had a Thomas splint made for her—to thoroughly immobilize the joint. This she continually wore during the day, and with no discomfort save the awkwardness in sitting.

"September 1st I began the systematic use of yeast nuclein, and the improvement almost from the first has been noticeable and extremely gratifying. The remedy has been administered hypodermically, and the site chosen was the region immediately around the affected hip joint. The first few injections were made daily, but the reaction seemed to me so marked that I found treatment on alternate days to be more satisfactory. It has been recommended, as a good precaution, to sponge the chosen site with a two- or three-per-cent. solution of carbolic acid, for its antiseptic and local anæsthetic effect. This precaution, however, I did not find necessary, but used great care with needle and syringe, sterilizing both, each time, before using.

"From September, 1894, to January, 1895, the case was under constant supervision and care, and correct and detailed reports were kept noting the patient's temperature, general condition, and especially the amount of nuclein solution which was injected at each visit. At the beginning twelve minims only were used in each twenty-four hours, this being gradually increased to fifty minims with the happiest results. There were at times some pain and a burning sensation at the site of the injection. The temperature each afternoon was about 99° to 99·4°, on one or two occasions going as high as 101·2°. At the time of the last-named date the patient experienced no pain whatever in the hip and expressed herself as feeling as well as ever. The nuclein was temporarily stopped, and I do not consider it accomplished all a continuance of it might do. The improvement has been most gratifying since I began giving the nuclein, and I think there can be no doubt that her comfort has been due, in a large degree, to this remedy. It was given with the idea that her case was probably tuberculous, and for this suspicion the family history affords us more or less ground. The nucleins are said to be of avail in incipient tuberculosis, and this seemed a good case for their use, which is, of course, as yet largely empirical. The disease process in this case certainly seems to have been held in abeyance. Whether the action of the nuclein in such a case is simply to enable the cellular elements to resist encroachments of bacilli, or whether we may hope for so strong a germicidal action as to destroy entirely the bacilli, is, I judge, a question concerning which one can, as yet, only speculate. This patient understands that she is forbidden to step on her left foot or use the limb before next summer, and the day may then be still further postponed. I do not yet regard, or now report, the case as one of recovery, but it seems to me especially interesting as showing gratifying improvement under the use of an agent, quite new as yet, which may have a wide field of use. I hope eventually to have the young lady walking without apparatus of any sort and an evidence of what conservative treatment may accomplish, even in a somewhat unfavorable case."

In a postscript written in January, 1896, Dr. Hitchcock adds:

"This patient was kept under frequent observation until May, 1895, the splint having been discarded some time earlier. In May, first one crutch, then both, and later the cane were dispensed with, the injections of nuclein were discontinued, and the patient has since walked through the summer and fall without support of any kind and without any discomfort whatever in the hip. She has been very happy and grateful for her relief from pain, and it has been delightful to see her evident joy in her ability to walk without suffering. Indeed, she has been altogether a pleasing fulfillment of what I hoped

to do when I first reported the case in January, 1895, and this excellent result I attribute very largely, if not entirely, to the long and persistent use of nuclein."

Cantharidate of Potassium in the Treatment of Tuberculosis of the Wrist.—In the January number of the *Annales de dermatologie et de syphiligraphie* M. Gaston Brauthomme gives an account of the following case: The patient was a shoemaker, thirty-six years old. He was attacked with cutaneous tuberculosis in the upper part of the right hand and the lower part of the wrist. The author practised *raclage*, which, however, proved insufficient, for a relapse occurred. He then resorted to the use of cantharidate of potassium.

On the 21st of May the urine contained no albumin, and the author began injections with the following liquid:

Cantharidate of potassium.... 0·0015 of a grain;
Cocaine hydrochloride..... 1·5 grain;
Distilled water..... 150 grains.

Eight injections of a cubic centimetre each were made up to the 4th of June; another of two cubic centimetres was given on the 12th of June. The punctures were rather painful, and an abscess formed around one of them.

The first two injections were followed by a rise in temperature to 103° and 102·1° F. There was a local reaction which manifested itself by a rather copious exudation. This, however, did not occur at the third injection, and cicatrization took place very rapidly.

At no time, says the author, when the urine was examined was there any trace of albumin found. At the present time cicatrization is perfect, and the patient is in excellent health.

Injections of Corrosive Sublimate in Tuberculous Cystitis.—In an article on this subject, published in the *Gazette hebdomadaire de médecine et de chirurgie* for February 9th, the writer says that, according to M. Verhoogen, the solution should always be very weak, especially in the beginning; it varies according to the patients. For example, the first solution used is in the proportion of one in ten thousand; this is generally well tolerated, and provokes only a feeble reaction, a slight burning in the vesical region, and a very slight pain on the first micturition which follows the injection. After several injections this pain disappears. The strength is progressively increased from one in nine thousand to one in eight thousand, etc., and it should rarely exceed one in four thousand. The solution of the corrosive sublimate in water should be made without the addition of alcohol, which, even in a very small quantity, renders the injection extremely painful and gives rise to the most disastrous effects in the bladder.

The quantity injected should not exceed seventy-five or ninety grains; occasionally, when the cystitis is very intense, the bladder can not tolerate more than fifteen or thirty grains of the liquid. We should never try to exceed the quantity which may be easily tolerated. In proportion as the amelioration is produced, the capacity of the bladder increases, so that a larger quantity of liquid may be injected, although it should not exceed from seventy-five to ninety grains.

The patient should retain the injection as long as possible—for ten or fifteen minutes at least. The injections should be administered every day or every two days, and the patient should remain in bed in order to prevent micturition following too soon after the injection. If the treatment is painful, the strength of the solution should be diminished or the injections given at longer intervals.

In this way, says the writer, the best results are obtained, provided, of course, the general treatment for tuberculosis is employed at the same time. It is not rare to see the painful symptoms of cystitis disappear completely. In two patients who were under M. Verhoogen's observation for several years micturition became normal and was not at all painful; the urine was perfectly clear, and contained no traces of pus. This condition persisted for four years in one patient and for two years in the other, and there was nothing to lead him to fear a relapse, although in the latter tuberculous manifestations had since developed in other organs.

Depilatories.—In an editorial in the *Lancet* for February 15th the writer says it is idle to ignore the fact that a great deal of unhappiness is often caused by bodily defects which are so slight as to be almost beneath the notice of a physician; yet, if remedies can be found for such trifling ills, it is better that they should be intelligently prescribed by those who have had the requisite training and knowledge. It is the neglect of trivial ailments that is often responsible for quackery, and it is the duty of the medical profession to save people from that resort as much as they can. Therefore, he says, he does not hesitate to make a few comments on a subject which is barely mentioned in the text-books.

The ordinary components of these so-called depilatories, he says, are quicklime, soda, and a combination of sulphur and arsenic. The powder is made into a paste, spread on the face or other part, and washed off as soon as it is dry. It acts by desiccating and dissolving the hair shaft, and, by reason of its irritating nature in unskilled hands, is apt to give rise to troublesome consequences. Erasmus Wilson, he says, narrates the case of a young lady who had been making an experiment of this sort on her forehead for the purpose of getting rid of a tuft which interfered with the mode of wearing the hair then fashionable. She had unfortunately allowed the depilatory to remain on too long, and it resulted in a slough of the size of a shilling, followed by an unsightly scar. The safest of such applications is a paste of barium sulphide and starch, regulated in strength to the delicacy of the skin and applied by skilled hands. Kaposi mentions that in the Orient among the Jews a paste is used for the periodical removal of the stubble of the beard which consists of orpiment and slaked lime boiled with water. In this instance the after-growth does not appear until two or three weeks have elapsed, when the application has to be repeated. But all these methods, says the writer, are at best only palliative, for the formative organ remains, and they are all equally apt to be followed by a stronger growth of the hair, and sometimes they give rise to ugly marks and scars. Ointments have been employed, but in general they are to be deprecated, for greasy applications tend to promote the growth of hair, as, for instance, on the backs of the hands when vaseline is used to prevent chapping in cold weather. Nevertheless, a strong resorcin ointment, accompanied by powerful friction, has in the practice of a few found favor. The introduction of chromic acid and other caustics into the hair bulb by means of a needle is uncertain on account of the difficulty of regulating the resulting inflammation. Another popular method of disposing of extraneous hairs is by the tweezers, a painful process and, like the preceding and the razor, only temporary.

All these methods, however, the writer goes on to say, are unsatisfactory, and it is to our American cousins that we owe the introduction of the only efficient means for the destruction of hair bulbs. It was an ophthalmologist—Dr. Michel, of St. Louis—who first employed electrolysis with success for epilation in cases of trichiasis, and it was afterward extended to dermatology by Dr. Hardaway. The procedure has now

become perfected, and has come to be recognized as the least unsatisfactory one for the eradication of superfluous hairs. A blunt needle connected with the negative pole of a galvanic battery with a current of from a half to one milliampère or more is introduced into the hair follicle, if possible without injuring it, and the papilla is destroyed by the decomposition products formed, which are probably caustic alkalies. The hair is then either removed or allowed to drop out, and the operation is followed by a minute red mark, which disappears either without a trace or leaving an extremely fine, shallow depression. Very occasionally these tiny scars subsequently take on a keloid growth. But electrolysis, says the writer, is a tedious process, for no more than twenty or thirty hairs can be removed at a sitting, a circumstance which is open to misinterpretation, if the patient is not warned beforehand of the number of sittings required; and, though these hairs never grow again, others come forward and have to be dealt with from time to time until all are eradicated. But in the hands of a skilled practitioner this method gives a sufficiently satisfactory result in a limited, localized tuft, provided the patient does not mind the inevitable little temporary red spots which appear after each sitting. But if the growth of hair is in any sense diffuse, on a woman's chin, for example, the tiny hairs beside the old ones keep growing up as the others are destroyed month by month and year by year, so that an almost unlimited attendance is necessary. Indeed, so indefinite is the treatment and so frequently do complaints arise on that account, and if the current is not very carefully adjusted, so difficult is it to prevent temporary disfigurement, that many professional men of standing refuse to undertake these cases. This determination on their part the writer believes to be a mistake, as the unsuccored sufferer flies to quackery.

Electrolysis is the only means known up to the present time which in *capable* hands is able to destroy the papilla whence the hair grows, without risk of producing serious consequences. All the other procedures, including those above mentioned, only result in destruction of the hair shaft, in which case they are not much superior to the razor; or if the cuticle is penetrated, widespread suppuration and resulting scars are apt to be produced. It is therefore the duty of practitioners to warn their patients against them, and especially against trusting themselves to treatment with these powerful remedies at the hands of unqualified, irresponsible, and often wholly unscrupulous persons.

Common Sore Throats.—In the *Lancet* for February 15th Dr. Clement Dukes, physician to the Rugby School, alludes to the importance of seeing invalids in the very earliest stage of their indisposition, as we are able then not only to learn the symptoms of the onset of the disease, but, a circumstance of still greater moment to the individual patient, to place him early under the most favorable conditions as regards himself, and to isolate him if need be for the protection of others. In his very early days of office at the school, he says, he recognized the importance of knowing the condition of the throat in the young, it being involved in so many illnesses; consequently the habit arose intuitively of looking at the throat of every boy who expressed himself as not feeling well, without waiting for any complaint from him concerning it. Whenever the least deviation from a healthy appearance was noticed, says the author, however trivial, strict isolation was enforced, and the patient was kept away from the healthy boys until he had quite recovered. In this way all ailments attended with sore throat, some of them of the greatest moment to the young, had been prevented from spreading. It is scarcely necessary to point out, he says, that it is the first cases that require attention and isolation if the diseases are to be limited in extent. On inspection of the throat in the young in the very earliest stage of its abnormity certain common conditions are discovered which gradually assume the various forms typical of recognized diseases, and these throats, says Dr. Dukes, are seen and the patients isolated often long before a diagnosis is possible. When a case can be diagnosticated at first sight, it is far too late for the welfare of the individual and for the protection of others.

With regard to inflammatory sore throats, he says, the first stage of all the common sore throats, which are termed amygdalitis, is that the membrane of the fauces generally appears smooth, dry, glistening, and as if all secretion and the superficial layer of the mucous membrane had been scraped off and the surface polished. Many throats under treatment proceed no further than this stage. In the next condition this superficial layer of the mucous membrane is swollen, which causes it to assume a dusky-red velvet appearance, and this also may proceed no further. This is succeeded in a large proportion of cases by swelling of the tonsils, which gradually become covered with minute isolated white dots, which are occasioned by an excess of the normal secretion, owing to the inflammation, from the follicles of the tonsils. This secretion in certain cases—and these individuals usually have this kind of throat whenever they take cold—becomes so excessive as not only to appear at the orifices of the follicles, but to join one another until the surface of the tonsil becomes covered with a thick, soft, ashy-gray, dirty-looking membrane, but one which bears no more relation to diphtheria than chicken-pox does to small-pox. The same individual invariably has the same kind of inflammatory throat, and whenever he takes cold it is in the form of, or accompanied by, a sore throat. In the last phase of these cases of amygdalitis the inflammation and swelling—often after a prior subsidence, so as to seem almost like a recrudescence—increase, extend, and involve the soft palate, and a quinsy is formed. All these forms of amygdalitis, says the author, are infectious in the young, and they spread in the same way, but not to the same extent, as common colds.

Respecting septic sore throats, he says, which may arise from defective arrangements in the water supply, drainage, etc., he urges the necessity of flushing drains and emptying drinking-water cisterns and filters before the reassembling of school after each vacation.

The sore throat of scarlet fever in its initial stage consists of a diffuse, dull, brick-red appearance of the mucous membrane of the fauces—in fact, it is a diffuse rash on the mucous membrane similar to that which occurs subsequently on the skin. It begins at, or at all events is most visible on, the wings of the soft palate, extending to the tip of the uvula, but it involves the whole of the mucous membrane of the fauces. In a large proportion of cases it begins and ends in this, though in many it progresses to every phase of ulceration, which alone is sometimes difficult to assign to scarlet fever; but the character of the rash, together with the peeling tongue on the fourth day, leave little doubt as to the diagnosis. It is the slight sore throat accompanied by merely a transient rash which causes the main difficulty in diagnosis.

In the *sore throat of diphtheria*, at the onset, there is usually a dark redness and swelling of the tonsils and the fauces generally, with very marked œdema of the uvula, which appearances are quite undistinguishable from acute amygdalitis. Hence, says Dr. Dukes, the necessity of at once isolating all patients with amygdalitis, as no one can possibly be sure what form of sore throat it will prove to be. Subsequently the whole or a part of the fauces becomes covered with a gray-

ish secretion, sometimes assuming the character of a dense membrane like wet wash-leather, which arises in patches, and rarely in the small white regular dots which coalesce into a patch incidental to amygdalitis. These patches spread and may become continuous, involving the whole of the fauces.

The sore throat of varicella is occasioned by spots on the mouth and pharynx similar to those on the skin, and they often greatly resemble the small ulcers common to stomatitis, from which they are distinguishable by the eruption on the skin.

The *sore throat of epidemic roseola* (*Rötheln*) resembles closely the early stage of the throat of scarlet fever, but it is accompanied by very early enlargement of the posterior cervical and other glands. There is no peeling of the tongue on the fourth day.

Kosotoxin.—Handmann (*Arch. f. exp. Path. u. Pharmakol.*, xxxvi, 1, 2; *Fortschr. d. Med.*, Feb. 15, 1896) calls attention to Leichsenring's statement that what has been known as kosin certainly does not exist already formed in the flowers of *Brayera anthelminthica*, and that it is not poisonous, whereas every other active principle of remedies against tapeworm has, on adequate investigation, proved poisonous, especially to frogs. Leichsenring isolated from kousso flowers an amorphous, yellowish-white body, $C_{26}H_{34}O_{10}$, termed kosotoxin. Kosotoxin melts at 176° F. and is soluble in alcohol, in ether, in chloroform, and in solutions of the alkaline carbonates. A very thorough course of experiments on frogs has shown that this substance acts as a paralyzer of the muscles by its effects on the motor-nerve terminations, but has hardly any action on the central nervous system. In mammals it causes death by paralysis of the respiratory muscles. Kosotoxin, then, resembles pannic acid, isolated from the rhizome of *Aspidium athamanticum*, in its poisonous effect on the muscles and in the weakness of its action on the central nervous system, while filicic acid and the acid of polystichum are above all else paralyzers of the central nervous system. Handmann's attempts to expel tapeworm from cats by means of doses of a grain and a half of kosotoxin have proved unsuccessful.

Phenocoll in Whooping-cough.—Dr. A. Martinez Vargas, professor of pædiatrics in Barcelona (*Therap. Woch.*, Jan. 5, 1896), employed the phenocoll treatment of whooping-cough in forty-two cases during the period from February, 1894, to June, 1895, and he declares that it is far superior to any other remedy for that disease that he has ever tried. In every one of his forty-two cases its effect was shown within the first twelve hours, although in many of them the frequency of the paroxysms was not reduced until the next day. Even in children of a very tender age he has not observed any untoward action of the drug. He gives the hydrochloride in daily amounts of from one to thirty grains, according to the patient's age; he has always used it dissolved in water to which sugar or gum arabic has been added. He remarks that it is absorbed very rapidly and eliminated promptly. He thinks that the efficiency of phenocoll hydrochloride in whooping-cough is not due to its antibacterial action, but to its acting as a sedative.

The New York Academy of Medicine.—At the last stated meeting, on Thursday, the 5th inst., the order for the evening was to be a paper on Broncho-pneumonia as a Complication of Diphtheria in Children, by Dr. Henry W. Berg, to be discussed by Dr. H. M. Biggs, Dr. William H. Park, Dr. John W. Brannan, Dr. William P. Northrup, Dr. Joseph O'Dwyer, and others.

At the next meeting of the Section in Genito-urinary Surgery, on Tuesday evening, the 10th inst., Dr. G. S. Huntington will read a paper entitled The Morphology of the Seminal Vesicles. Dr. R. H. M. Dawbarn will present a new method of bladder drainage, and Dr. R. W. Taylor and Dr. B. B. Gallaudet will exhibit vesical calculi removed by suprapubic cystotomy. Patients will be presented and new instruments exhibited.

At the next meeting of the Section in Pædiatrics, on Thursday evening, the 12th inst., a paper entitled Acute Retro-pharyngeal Abscess in Infants and Young Children—Classification, Ætiology, and Treatment, will be read, to be discussed by Dr. D. Bryson Delavan, Dr. Willy Meyer, and Dr. C. G. Coakley; Dr. Emily Lewi will report two cases of cretinism; and there will be a presentation of patients.

Hypertrophy of the Breasts in a Young Girl.—At a meeting of the Royal Society of Physicians of Budapest held on October 26th, Dr. Rottmann (*Wien. klin. Rundschau*, Feb. 16, 1896) showed a girl, fifteen years old, who had come to his clinic a month before. Since the preceding June both her breasts had grown so that they hung down to her waist; at the time of the meeting they reached to her thighs. They seemed to be pediculated and some of the individual lobes could be felt to be enlarged, but there was no induration or fluctuation. The girl was a virgin, well developed, but anæmic. Thyreoid tablets were to be prescribed for her.

Conservatism in the Treatment of Injuries of the Limbs.—In the *Revue de chirurgie* for January, M. Paul Reclus describes the following new method which he has successfully used for several years: Instead of cutting the crushed limb he embalms the seat of the injury in antiseptic substances and waits for Nature to separate the dead from the living tissue. The patient is laid on the operating table and wrapped in hot sheets which are frequently renewed, and, if necessary, injections of artificial serum, of caffeine, or of ether are given when there is danger of collapse. If sensibility is not completely deadened, several inhalations of ether are administered, for the procedure is a long one and great attention has to be paid to the details. The region of the injury is fully exposed; the limb is washed with hot water and soap, and the skin is shaved with the greatest care and rubbed with a hard brush; ether is used to remove all greasy substances, after which applications of alcohol and potassium permanganate are made. When the skin is thoroughly disinfected attention is given to the seat of the deep injury. Splinters of bone stripped of periosteum, fragments of muscles, and loose tendons should be removed; then with a high-pressure injector, which is filled with water at a temperature of 140° F., all the cavities of the wound are flushed with an energetic jet which penetrates to the innermost recesses and under all denuded structures, and expels all the foreign bodies and the clots; this is continued until the entire region has been methodically and thoroughly irrigated. The advantages of the hot water, says the author, are that it is antiseptic and hæmostatic, and that it revives the patient, whose temperature is always below normal.

After the injections have been practised a tampon of absorbent cotton saturated with a solution of potassium permanganate is used to wipe the parts, and especially the adjacent skin which may have been soiled by contact with the clothing or with the earth. After a thorough disinfection has been made of all the suspected parts, the embalming process is begun. This consists in the application of an ointment which contains a very large quantity of active substances, some of which, such as corrosive sublimate, carbolic acid, and

iodoform, are in weak proportion, while the others, such as boric acid, salol, and antipyrine, are distributed more abundantly. This ointment is spread on tarlatan strips and put into all the interstices, under all the undermined skin, and into all the "dead spaces." Then over the entire limb a more or less thick layer of absorbent cotton is laid, and with a moist tarlatan band the tissues are gathered together and compressed in such a manner as to consolidate them so that they may support each other and their blood-vessels may anastomose. By this compression the excess of the antiseptic substances will be driven into the absorbent cotton. Sometimes, says M. Reclus, from the first day the dressing is saturated by the bloody serosity which comes from the limb, and in that case fresh layers are put on, and the wound is not looked at again until the twenty-first day, unless the temperature rises or very disagreeable odors come from the dressing.

Generally at the end of the third week the dead tissues separate from the living, and all the eschars fall, except perhaps a few aponeurotic or tendinous shreds. After they are detached and all the surfaces are granulating and of a rosy hue, nothing remains but to detach the soft parts which cover the ends of the bones, and the periosteum is detached to a sufficient height in order that the tissues may constitute a solid and well-padded stump. The definitive results, says M. Reclus, have been excellent in all his cases, and he thinks that amputation could not have given such brilliant results, as it is in itself a very dangerous procedure, and the mortality following such operations is considerable. There is the danger of a fresh shock to an organism already disturbed, on the one hand, and, on the other hand, there is the necessity of sacrificing a great deal of healthy tissue in order to take away all the mutilated tissues. These arguments, he says, led him to substitute the dogma of conservatism with the protection of rigorous antisepsis followed by a veritable process of embalming. This doctrine is altogether new and the practice has no name in medical literature; nevertheless, he says, it is but the extension of a mode of treatment which has become classical, and is in accord with the teachings of Verneuil, of Trélat, and of Polaillon, who said, in regard to traumatisms of the hand: "Do not excise, do not employ the bistoury; let there be no amputation and no resection. Practise antisepsis and leave it to Nature to save all that can be saved. Do not forget that the most capable surgeon does not know what will die and what will continue to live."

Owing to rigorous disinfection, says M. Reclus, septic phenomena no longer attack the wounds; the anatomical elements and the tissues killed mechanically alone die, and those which are simply bruised revive and form stumps which are superior to those obtained by amputation.

Experimental Inflammation of the Vermiform Appendix.—At a recent meeting of the *Société médicale des hôpitaux*, a report of which appears in the *Journal des praticiens* for February 8th, M. Roger and M. Josué gave an account of some experiments on rabbits which they had undertaken in order to throw more light upon the pathogeny of appendicular inflammation. The authors injected into the appendix several drops of a virulent culture of the *Bacillus coli* and then ligated the appendix, and in two weeks the animals had died. An examination revealed a suppurative inflammation of the appendix, with inflammation of its peritoneal coat. Subsequently it had been found that it was not necessary to inject microbes in order to produce the inflammation; aseptic ligature of the appendix had been found sufficient. In an animal which had died three months after having undergone the operation an examination showed that the part of the appendix which had been isolated by the ligature had been transformed into a cystic sac which did not communicate with the intestine; it was filled with a thick pus which contained the *Bacillus coli* in a state of purity. Thus this microbe, which was habitually found in the appendix, existed as an inoffensive parasite while the course of the secretions was not impeded, but it became virulent when stasis was produced.

Although there had been no vascular troubles, the blood-vessels having been spared by the ligature, a suppurative inflammation had developed, and near the ligated point an occlusion had been produced which had persisted in spite of the absorption of the catgut. The purulent nucleus had remained latent for months, and had provoked no peritoneal reaction; nevertheless, it had constituted a permanent danger, for its rupture would have provoked a subacute peritonitis, as the abscess had not been limited by false membranes and still contained living microbes. From this the authors concluded that an aseptic and temporary obstruction in the appendix was sufficient to cause a suppurative inflammation by transforming an inoffensive microbe into a pathogenic agent.

M. Rendu stated that clinical facts existed which were quite comparable to these experimental results. He had been present at the autopsy of a phthisical subject, he said, and had noticed that the appendix had been transformed into a closed cavity which was filled with pus. This lesion had, moreover, remained absolutely concealed. It was very certain, he said, that a pathogeny so vague could not be applied to all forms of appendicular inflammation; but he thought that the experiments related should be taken into consideration, as they cleared up the pathogeny of certain varieties of this inflammation very decidedly.

The American Medical Association.—The chairman of the Section in Neurology and Medical Jurisprudence announces that a desire has been quite generally expressed to have discussions upon the following topics at the coming meeting: The Ætiology of Insanity; Expert Medical Testimony in Disputed Mental Cases; and The Medical Aspects of Crime. It is believed, he says, that these topics have a special medical interest at this time, and papers dealing with any phase of these subjects will be very welcome. An urgent invitation is given to all members, whether they are expecting to be in attendance or not, to present papers and records of cases that have a bearing upon the topics mentioned or upon any other neurological or medico-legal subject. Persons who expect to contribute papers or reports will greatly facilitate the business of the section by writing at once to the chairman, Dr. T. D. Crothers, of Hartford, Conn., or to the secretary, Dr. W. J. Herdman, of Ann Arbor, Mich.

How to remove Cerumen.—In the *Presse médicale* for February 19th M. Laurens recommends the following process for the removal of cerumen: Before beginning the treatment, he says, it is prudent to ascertain the previous condition of the auditory canal, for, if the ear drum is perforated, the syringe must be handled with the greatest care. The author insists on the absolute avoidance of instruments, as their employment often exposes the patient to serious accidents which may cause hæmorrhage, deafness, and vertigo.

The syringe should be thoroughly sterilized and capable of containing about three ounces and a quarter of liquid. The extremity should be very fine and perfectly cylindrical. It is well to attach a soft-rubber tube a centimetre long to the end to prevent injury to the passage. Water that has been heated to 98·3° F. should be used, but it must not be applied too hot. In administering the injection, the end of

the syringe should be directed along the upper wall of the meatus, so that the water, by its force in returning, may expel the cerumen. The first injection should be made very gently, in order not to cause vertigo, which, although temporary, is serious. If no symptoms occur, from five to six syringefuls may then be injected.

If the cerumen does not become loosened, violent syringing must not be resorted to, as it may result in injuries that may affect even the inner ear; the cerumen may adhere to the ear drum, and its violent detachment may induce hæmorrhage of the membrane. The cerumen must then be softened, and M. Laurens recommends the following solution:

Sodium carbonate		15 parts;
Glycerin, Water,	each	300 "

Six drops of this solution are to be warmed and dropped into the ear three times a day; a tampon of cotton is placed in the ear after each instillation. Under the influence of this solution the cerumen swells, but the patient need not be alarmed if the deafness, the buzzing, and even vertigo should increase, for these symptoms will disappear after the cerumen has been expelled.

At the end of forty-eight hours fresh injections may be repeated, and, if the lump is still immovable, the instillations are again resorted to. Sometimes the cerumen is not expelled in a mass, but remains inclosed in the meatus; it is then necessary to use an instrument; if it comes out only in detritus, the ear should be syringed until the water comes out clear.

After the extraction, the ear should be thoroughly dried and a small tampon of cotton placed in the entrance and allowed to remain there for two days. This prevents the sudden access of air, which may give rise to otitis, especially during cold weather; it deadens sound which, striking the ear suddenly, causes pain. So long as this auditory hyperæsthesia persists, the cotton should remain in the ear.

Although, says M. Laurens, recovery may be complete, and the hearing become normal, there is the possibility of a return of the trouble, and patients should he advised to use warm injections every month, and warned not to use pins, etc., which only push the cerumen deeper into the ear.

"Discordant" Subtrochanteric Amputation.—In the *Presse médicale* for February 8th M. Chaput describes a new operation which, he says, is very rapid and very easy of performance, much easier than the classic subtrochanteric amputation. The procedure is as follows: 1. After ascertaining the exact point for osseous section, a vertical incision a few centimetres long is made at this point on the outer surface of the thigh. This incision is carried quite to the bone. On the flat of the bistoury a Macewen's osteotome is slipped, and, with a large mallet, the bone is divided, the usual precautions being observed. 2. The skin is incised immediately above the patella, and is retracted in the form of a flap for a distance of about two finger breadths, then the soft parts are cut through to the bone. Forceps are placed on the principal bleeding blood-vessels. 3. The incision made in the osteotomy is prolonged downward until it joins the circular incision of the skin. Rapid section is made as far as the bone, which is denuded with the bistoury, and when this denudation is accomplished the operation is finished.

Then the wound may be closed hermetically or left open, or either the circular incision or the external incison may be closed.

The author advises always closing the external incision, for the muscles form a considerable projection through the wound when it is not sutured, and cicatrization is very much retarded.

While the classical amputation, says M. Chaput, entails a considerable loss of blood, this procedure prevents the loss of even a drop. Fewer blood-vessels are cut, and there are not so many ligatures to be applied. Hæmostasis is of short duration, and there is less danger of infection.

The raw surfaces in this procedure are not so extensive as those in the ordinary subtrochanteric amputation, and there is consequently less absorption of germs during the course of the operation, so that there are fewer chances of infection.

Finally, says the author, the stump is as good as could be desired.

The author compares this procedure to Neudorfer's, and says that, while the latter's operation is applicable to all the limbs and for all amputations, the procedure described above is justifiable only in subtrochanteric amputations and in disarticulation of the hip, which is carried out in the following manner: 1. By means of an incision following the course of the upper border of the neck of the femur, osteotomy is done toward its median part. 2. Circular section of the soft parts at the lower part of the thigh is done in the same way as in the procedure for subtrochanteric amputation. 3. An external incision, uniting the original incisions, is followed by isolation and ablation of the femur. 4. With a Farabeuf's forceps the neck of the femur is seized and the head is removed with a bistoury. If ablation of the head is not indispensable, it is preferable to leave it in place, in order to avoid the accumulation of liquids in the cotyloid cavity.

The author maintains that this method of disarticulation at the hip is easier, more rapid, more benign, and less apt to cause hæmorrhage than the procedures hitherto described.

The New York Post-graduate Medical School and Hospital.—One of the wards has been named in memory of the late Dr. Charles Carroll Lee, who was for many years a professor in the institution. They have placed a tablet in the ward, giving the names of those who combined to contribute the ten thousand dollars which was given for the purpose of the memorial. These names are as follows: Dr. Robert Abbe, Dr. L. Bolton Bangs, Mrs. James Beales, Dr. Stephen S. Burt, Miss Caldwell, Dr. Charles L. Dana, Dr. Bache McE. Emmet, Dr. George H. Fox, "a friend," Dr. Horace T. Hanks, Mr. and Mrs. Eugene Kelly, Mr. and Mrs. Henry J. Lamarche, Dr. Daniel Lewis, Mr. and Mrs. William Lummis, Mr. and Mrs. Frank A. Otis, Dr. Clarence C. Rice, Mr. Eli K. Robinson, Mr. Nelson Robinson, Dr. D. B. St. John Roosa, Mrs. Eliza M. Sloan, Dr. Andrew H. Smith, Mrs. M. E. Sparks, Dr. Reynold W. Wilcox.

The Dose of Lactophenine for Children.—Senfft (*Wien. med. Presse*, Dec. 15, 1895; *Am. Therap.*, January, 1896), who finds lactophenine an advantageous antipyretic, gives the following table of doses:

2 years old,	one eighth	of the	regular	dose	for	an	adult.	
3	"	"	one sixth	"	"	"	"	"
4	"	"	one fifth	"	"	"	"	"
7 to 12	"	"	one third	"	"	"	"	"
12 to 14	"	"	one half	"	"	"	"	"

The Passage of Santonin into the Mammary Secretion.—Coronedi (*Ann. di chim. e farmacol.*, xx, 3; *Dtsch. Med.-Ztg.*, Feb. 13, 1896) concludes as the result of experiments that santonin, given to a nursing woman, does not find its way into the milk in sufficient amount to cause toxic or even medicinal effects upon the nursling.

A Röntgen picture showing the bones of the hand without flesh, and the bones almost entirely penetrated. Taken with a static machine and a vacuum tube having tin-foil electrodes, and without a converter.

Original Communications.

A RÖNTGEN PICTURE FROM A MEDICAL POINT OF VIEW.

BY WILLIAM JAMES MORTON, M. D.

UPON my submitting to the editor of this journal some beautiful and well-defined Röntgen pictures of the bones of the hand he remarked that, while in themselves they were objects of interest from a purely physical or artistic point of view, they really had no specific medical interest. For this reason, I have selected another, here reproduced, to illustrate two points which are of medical interest—the first, that the flesh itself has been so thoroughly penetrated by the Röntgen rays that no evidence of it exists upon the plate; the second, that the bones themselves have also been penetrated and were upon the point of disappearing. With a very little more exposure they would have presented upon the sensitized plate no evidence that they had ever been interposed. It follows that the situation of a metallic object like a needle or a shot or a bullet *behind* a bone or *in* the bone would have been shown in this picture, since the metal is denser than the bone; and I have in fact detected the situation of metallic objects through the bone in the living subject. I also find that thin pieces of metal are easily penetrated by these powerful Röntgen rays, and that judgment must be used to prevent over-exposure in this new method quite as well as in the familiar photography.

Up to this moment I have produced all my Röntgen pictures, extending to full penetration of the hand, the wrist, and the ball of the foot, without the aid of a Crookes's tube, a Ruhmkorff coil, or a converter of any sort.

When the Röntgen announcement was first made but few proper Crookes's tubes could be obtained in this country. I for one could not secure one. The subject was of absorbing interest and I determined to see what could be done with the static machine. I was able to obtain pictures from the spark alone as it passed powerfully between the discharging rods of my large static machine. This was the first one obtained and published * in this country, made without a vacuum bulb or tube, and the first demonstration that these radiations might exist in other electric discharges than those taking place in high vacua.

My next progress was to use some vacuum bulbs I had on hand, one constructed with one entering electrode consisting of a metallic bulb, and one external electrode of tin foil, the other having both electrodes entirely external, and to excite these bulbs by the static machine. I excited them in the circuit (long familiar from publications of my own) known as the "static induced current"—that is to say, in the circuit of the oscillatory current set up between the external armatures of two Leyden jars when a spark is passing between the discharging rods. Now that Crookes's tubes are beginning to arrive or to be constructed in this country, I am also using them in the usual manner with the coil and converter, but it will ever be a source of pleasure to me to feel that the inability to obtain the Crookes's tubes forced me to perfect and bring forward the use of the static machine and of very simple vacuum tubes, and my present opinion is that it may be possible on these lines of work to excel the present results which can be secured with the Crookes's tube itself.

* *Electrical Engineer*, Feb. 5, 1896.

LUMBAR PUNCTURE OF AN INTRADURAL HÆMATOMA OF THE SPINAL CORD.

BY OTTO G. T. KILIANI, M. D.

DR. GEORGE W. JACOBY, in his paper on Lumbar Puncture of the Subarachnoid Space, concluded in the number of January 4, 1896, of this journal, mentioned a case of puncture of intradural hæmatoma of the spinal cord which I reported in the September number of the *New Yorker medicinische Monatsschrift.*

As it appears that Dr. Jacoby's cases and mine are the only ones on record, you may possibly see fit to publish a somewhat detailed report.

T. S., forty-five years of age, fell on his back from a height of twenty feet, while working at Croton, N. Y., at four o'clock in the morning, July 1, 1895. Being slightly under the influence of liquor at the time of the accident, he was unable to give an accurate account of his fall. He was found after a few hours, and was brought to the St. Francis Hospital, in this city, where he was admitted about five o'clock in the afternoon. Catheterism.

On examination, the patient, who was apparently still under the influence of the shock, showed the typical clinical symptoms of an injury to the cord in the lumbar region and cauda respectively, complete motor paralysis of both lower extremities, sphincter ani, lower part of the rectum, and bladder; complete anæsthesia of both limbs, reaching upward on the body to an imaginary transverse plane drawn through the third lumbar vertebra and a point about two centimetres below the umbilicus. This area of insensibility therefore included the perinæum, scrotum, and penis, both dorsal and inferior surfaces.

A careful examination of the spine showed a spot of extreme tenderness on the third lumbar vertebra, but no deformity or crepitation, so far as could be ascertained. The region of the third lumbar vertebra was slightly ecchymotic. No patellar reflexes, no cremaster reflexes, no clonus of the foot. Abdominal reflexes present.

Diagnosis.—Compression of the conus terminalis and the cauda, probably by hæmorrhage (possibly by dislocation or fragment after fracture). The patient was comparatively easy in extension, with contra-extension at the head, on the water bed, and flatly refused an operation proposed on the following day (so-called laminectomy).

There was absolutely no change in the condition of the patient in the next few days up to the 6th of July, with the exception of profuse diarrhœa, which could hardly be controlled. Repeated examinations showed absolutely no change in the area of motor and sensory paralysis, the outlines of which had been marked with nitrate of silver.

On the 6th of July the patient consented to a puncture, which was done without narcosis in the typical way so often described. The patient was rolled on the left side, with only slightly convex spine, on account of the possible danger of compression of the cord. A strong needle was inserted in the vertebral canal between the third and fourth lumbar vertebræ, about one centimetre and a half from the median line, after several attempts, on account of the muscular development of the heavily built patient. Aspiration of eight cubic centimetres of thickish, tar-colored blood, which presented somewhat the appearance of a hæmarthros removed in the second week. Aristol collodium on the point of puncture. This small operation was quite painful, but easy to bear.

Examination One Hour after the Puncture.—The anæsthetic area, which had been again determined a few hours before the operation, was considerably diminished, so that the whole hypogastric region decidedly, although not quite normally, responded to mechanical stimulus (needle). In the dorsum penis sensibility has also returned, while the conditions on the inferior surface, as well as on the scrotum, remained unchanged. A zone of returning sensibility was marked upon the inner aspect of the thigh and leg, as is shown in the figure. Sensibility had also returned in the toes. In the back

of the patient a certain decrease of the pain in the region of the third lumbar vertebra was noticeable. Besides, the upper limit of insensibility had receded some five centimetres. The gluteal and anal region was also improved to the extent shown in the diagram. The posterior portion of the perinæum showed the same improvement.

The extensors of the left thigh were capable of slight voluntary contraction, which had not been observed before. An examination with electricity of the different muscles could not be effected for lack of a suitable apparatus.

The paralysis of bladder and rectum remained persistent, and the patient had to be catheterized every four hours, and passed stools involuntarily. The above conditions remained unchanged until the 10th of July, 8.45 P. M., when the patient, in spite of every precaution, suddenly died while the bed was being changed, with symptoms of asphyxia.

To my great regret, the autopsy was refused, so that I was only able to remove a portion of the spinal cord twenty hours after death. The cadaver showed rigor mortis in a very marked degree and an enormous lividity, which made the whole body look almost black. This may be assumed as a post-mortem symptom of the sudden death. Incision over the spinous processes of the lumbar region; dissection of the longitudinal muscles; the arachnoidal space laid open by chisel from the first to the fifth lumbar vertebra; no dislocation or fracture found, neither of the body, arch, nor any of the processes (neither articular, transverse, nor spinous). It is nevertheless not at all impossible that a fissure or replaced dislocation might have been overlooked or not discoverable. It is only certain that no fragments compressed the cord.

The dura, which was not severed or in any way opened, showed at a point corresponding with the intervertebral space between the third and fourth lumbar vertebræ, to the left of the median line, a sharply circumscribed suggillation the size of a large pinhead, which showed where the needle entered. After incision of the dura, the cauda showed no macroscopic signs of bruising; a few remnants of a half-coagulated hæmatoma were still to be found. Although this post-mortem, for reasons mentioned above, is very incomplete, it abundantly proves that the puncturing needle really entered the intradural space, and furthermore that the blood evacuated in the aforesaid operation was actually drawn from the intradural space.

Omitting all the other details of my published report, I should like only to call attention to the therapeutic value of puncture in similar cases.

Wherever the hæmorrhage in the subarachnoidal space takes place, most of it will be collected in its blunt sac in the lumbar region. As it has been proved that compression of the cord merely by blood is possible (by Baginski and others), it is clearly our duty to try to remove the pressure by such a small operation as the puncture. Even if it is not followed by any improvement, it may be of decided value for purposes of diagnosis.

133 East Fifty-seventh Street.

A STUDY OF SPORADIC CRETINISM.*

By WILLIAM B. NOYES, M. D.,

ASSISTANT IN
THE DEPARTMENTS OF NERVOUS DISEASES AND CHILDREN'S DISEASES,
VANDERBILT CLINIC.

On September 1, 1895, at the request of Dr. George R. White, I examined a little child, a patient of his, living in Southampton, L. I., who had been treated by him for constipation and general malnutrition. The child, though two years old, was not much more advanced than a normal baby of six months. It seemed bloated, with a protuberant abdomen, puffy cheeks and face; the eyes were dull and listless; the nose short and *retroussé;* the tongue swollen and protruding from the mouth, with saliva constantly dripping from between the thick, protruded lips; the neck was short and thick, this thickness being partly due to two swellings of moderately hard consistence just in front of the sterno-cleido-mastoid muscles. The child was utterly incapable of holding

* Read before the New York Neurological Society, March 3, 1896.

up its head or moving its limbs, or taking notice of things about it, and seemed to be idiotic.

The fontanelles were wide open, and the bones of the skull soft. The length of the child was twenty-four inches. The

FIG. 1.—Photograph of Winifred P., taken when one year old, when signs of cretinism were just beginning to show themselves, a year before thyreoid treatment was begun.

arms and legs were quite short in comparison to the size of the body and head, and were somewhat swollen at the epiphyses, though not painful or soft like the swelling of rickets. There was no cranio-tabes, rhachitic rosary, bending of the bones, or any other rhachitic symptom. The mother told me

FIG. 2.—Photograph of Winifred P., taken September 1, 1895, immediately before treatment with thyreoid extract was begun.

that the baby was her first child, and her labor, though prolonged, had been normal. She and her husband were young, healthy people—he twenty-four years old, she twenty-seven—residing near the seashore. All their relatives were healthy, or had lived to old age. The baby weighed eight pounds and a half at birth, seemed healthy, and, gaining half a pound a week, reached fourteen pounds at the end of two months. Then it stopped short, and for more than a year did not gain at all, excepting a transitory increase on change of diet. The chief complaint was persistent constipation and weakness, for the mother had not noticed the other symptoms. The general condition seemed to be sporadic cretinism, the only other possibility being that some other form of idiocy was developing. Thyreoid treatment was advised, and about September 15th a box of five-grain Burroughs & Wellcome thyreoid tablets (equivalent to three sixteenths of a sheep's thyreoid) were sent, with orders to give the baby a quarter of a tablet daily, and to report to a local physician (Dr. Nugent) if the child was feverish. An entire tablet, or five grains a day, was, however, given by the mother through misunderstanding.

In three days, the mother states, the greatest change had taken place. The tongue and lips had gone down to the natural size, the neck became two inches less in circumference,

FIG. 3.—Photograph of Winifred P., taken February 1, 1896, after four and a half months of treatment.

the swollen abdomen three inches smaller, and the child began to perspire freely, something which she had never been known to do before.

The heavy dose of the thyreoid extract promptly produced symptoms of poisoning, with a temperature of 102° and considerable prostration, and such nervous symptoms as sleeplessness, restlessness, and constant moaning for nearly a week. At the end of this time the entire body desquamated, the dusky, unhealthy skin peeling off, leaving what the mother called a beautiful, clear white, waxy skin. Within two weeks the umbilical hernia disappeared.

On November 24th, after two weeks' further treatment of about a grain a day, the mother wrote: "The improvement in the past month is wonderful. A stranger would now take her for a bright, active child a year old. She has brightened in intellect for two or three weeks, her facial expression has changed entirely, and she has cut two under teeth without any trouble, but is still weak in the lower back." On January 5th the mother and Dr. Nugent wrote: "Her eyes are bright, her cheeks red, her face intelligent, and she is beginning to talk a little. She perspires freely, which she never

did until she began the treatment. She has been gaining from half a pound to a pound a week, and now weighs nineteen pounds and a half. She moves about the floor now a little and tries to say a few words. Since September she has grown from twenty-four to thirty-two inches in length. On February 2d she weighed twenty-two pounds and a quarter and had nine teeth, and has improved within three weeks, and every one seems to think she looks now like any other child."

This is one of several cases of sporadic cretinism on record in which positive results have been produced with thyreoid treatment, and presents a typical picture of its symptoms and course before and after such treatment. It is especially interesting with reference to the ætiology of the condition.

A general study of the subject of heredity shows frequent examples of how a taint or a faulty hereditary tendency may manifest itself in the next generation, or in a series of generations, by various abnormal formations in the physical structures of the descendants. These changes may be summarized as follows:

1. There may be a congenital local defect in some part of the body, such as (1) a change in one of the extremities, too many or too few fingers, or webbed fingers, shortening or lengthening of an entire limb or a segment. (2) A failure in the closure of one of the fœtal clefts, producing harelip, cleft palate, or an abnormally shaped palate, spina bifida, or meningocele. (3) Malformations of the genito-urinary apparatus, such as exstrophy of the bladder, fistula, epispadias or hypospadias, or any other abnormity of the male or female genital organs. (4) Congenital blindness, strabismus, or pupil abnormities; abnormally shaped ears or deaf-mutism.

2. There may be developed under the influence of heredity and handed down to the offspring, not a malformation of any particular organ, but abnormity of the growth function of part or all of the body. During the embryonic life no organ, except the heart, is used actively by the fœtus. Growth or development is almost the only function an embryo may be said to possess. If any cause intervenes to stop this growth, or interfere with it in any way, either the entire body or some part of it will show it by remaining dwarfed, stunted, or distorted to a greater or less degree.

3. If no general abnormity or local malformation occurs, and no disturbance of the trophic function takes place, the faulty or vicious heredity may manifest itself, as it most frequently will, in a deficiency of what is often vaguely termed the "vital force." This may show itself: (1) In the death of the fœtus *in utero;* (2) early death after birth from general weakness; or (3) in failure to attain full complexity of organization, general bodily feebleness, lack of resisting power, and liabilty to any intercurrent disease or infection; (4) or a general feebleness in nervous and intellectual force may occur, as shown in any of the idiotic, imbecile, or epileptic children, and in those who early fall victims to any of the other mental diseases.

More than one of these three forms of hereditary taint —local bodily defect, defect in growth, defect in general vitality—may occur in the same person. The most striking example of this is the well-known type, "the degenerate," who shows in some local bodily malformation, of almost any of the varieties mentioned, what we call a stigma, and in his unbalanced, erratic, unnatural mentality a condition so abnormal that its origin, like the stigma, may be sought for in a previous generation. Many epileptics, inebriates, criminals, and insane patients show the same combination of physical and psychical taint.

These general questions of heredity need to be emphasized because they have a very important bearing on the study of cretinism. While we can not, of course, say that cretins are degenerates, as the word is commonly used, there is a very significant hereditary element in the entire condition.

Some travelers who have observed the colonies of cretins that are found in great numbers in such mountainous countries as the Alps, Pyrenees, Apennines, Black Forest region of Germany, even parts of Russia, and the slopes of the Himalayas, have believed that they were the degenerated remnants of former races or tribes of men, for their dwarfed, stunted bodies, defective minds, and general feebleness made them seem more like specimens of a "run-out species" than anything else. Though this is probably not true so far as the scattered communities of cretins are concerned, the recent investigations of epidemic cretinism are positive and convincing that heredity is one of the chief causes in producing the individual cretins.

Brissaud (*Leçons sur les maladies nerveuses*, p. 606) states that endemic cretins are always the issue of parents who have goîtres. The infants do not seem to show symptoms of cretinism until they are weaned and drink the water; but only those whose parents have goîtres seem to become cretins, and it is not commonly found without this hereditary preparation. Downs (*Mental Affections in Childhood and Youth*, p. 82) says that "observations on the cretins in the Valley of Aosta, near Mont Blanc, show the presence of a distinct goîtrous heredity. The people with goîtres are not cretins, but the race tends by a gradual deterioration to the development of cretinism in the next generation."

Among them one bodily abnormity seems to be handed down, an abnormal thyreoid gland, which is either atrophied or changed by fibrous or adenomatous tissue to a goîtrous mass which is equally useless. Endemic cretinism is not so much a hereditary disease as a hereditary local deficiency passed along to the offspring like any other malformation.

The general belief that the chemical composition of the "hard water" used in these localities, or some unknown organic ingredient snow water may have acquired from the time it fell to the time it melted and was drunk, is the cause of cretinism has not yet been absolutely disproved and has seemed plausible. But cretinism is not the only endemic disease in these regions. All over Europe, and especially in the mountainous parts, where cretinism is common, statistics prove that deaf-mutism is prevalent in a much higher ratio than in lower regions. This increase is beyond the proportion that the number of cretins who were also deaf-

mutes can explain. The Swiss writers have for a long time admitted a close connection between struma, cretinism, and deaf-mutism. Special works on deaf-mutism have long since abandoned hypothetical conditions of the soil, water, altitude, and climate, originally claimed, and have demonstrated that the deaf-mute rate depends largely on social and hygienic conditions. Mygend (*Deaf-mutism*, p. 10) states that the endemic form of deaf-mutism in Switzerland is an expression of cretinic degeneration, and congenital deaf-mutism there and elsewhere is due to social and hygienic conditions common to mountainous countries—*i. e.*, consanguinity, poverty, and unhealthy homes, or, in other words, the general cause of deaf-mutism is heredity.

The physical characteristics of these cretins are familiar to all who have been through Switzerland, who will recall their large heads, dolichocephalic or brachycephalic; thick, short necks; eyes wide apart, frequently with strabismus; general stunted bodies, hardly three or four feet high; idiotic appearance; thickened, myxœdematous skin, pale or discolored; thick, puffy lips and cheeks; great thick tongues, too large for the mouths; prominent ears, and other characteristic symptoms. A few possess goîtres, but most of them have only the remnants of thyreoid glands. On autopsy, a change, generally atrophic, is found in the thyreoid. According to the degree of this change they become either (1) complete cretins, who are absolute idiots, helpless and dwarfed bodily, and lead a purely vegetative existence; (2) half cretins, whose minds are limited to taking in impressions of the senses. They are not altogether helpless, and some can do a little work, but remain hideous dwarfs with harsh voices and expressionless faces; (3) a cretinoid variety, who have attained some mental and physical development and do not present all the typical symptoms of cretinism.

In other parts of the world there are observed at rare intervals, independent of parents with goître, or residence at any special altitude, or peculiar water supply, cases presenting the general features common to endemic cretinism. These are known as sporadic cretins. In personal appearance one familiar with the endemic form would consider the general symptoms identical, but coming in early infancy and childhood the lack of any sign of intelligence is so striking that, as a rule, these cases have been confused with other varieties of idiots and imbecile children.

A more careful separation of the forms of idiocy shows the relation which this particular form of idiocy bears to the other more common forms. Bourneville (*Le Progrès méd.*, 1890) classifies the different forms as follows: (1) Microcephalic idiocy. (2) Hydrocephalic idiocy. (3) Idiocy due to arrest of development of convolutions. (4) Idiocy due to malformation of the brain. (5) Due to hypertrophic or atrophic sclerosis of the brain. (6) Due to meningitis or meningo-encephalitis; and adds a seventh form which he calls idiocy with *cachexie pachydermique*, or myxœdematous idiocy due to disease of the thyreoid gland.

Mentally this last form resembles the other varieties, but in its bodily development it is distinguished from them by changes which may be slight or very marked, due to the myxœdematous process, and to thoroughly understand the cause of these cretinic changes a study of the general process of myxœdema is necessary.

When the thyreoid gland is removed by operation in man or animals, or when it atrophies from disease of any sort, the following changes take place as worked out by Horsley and others.

1. A general disturbance in nutrition occurs, characterized by certain changes in the tissues. In myxœdema and chronic cachexia strumipriva there is at first a general increase in the bulk of the body, which is due chiefly to the infiltration and thickening of the subcutaneous tissues. It has been customary to speak of this as a deposit or infiltration of mucin, and original estimates of T. Cronston Charles stated that the skin of the feet in case of myxœdema yielded fifty times as much mucin as normal skin. Clouston (*Journal of Ment. Sci.*, January, 1894) stated that the various tissue cells of the body seemed to be separated more or less by a deposit of mucin. Horsley demonstrated mucin in the tissues of monkeys after thyreoidectomy. The latest examinations by Halliburton (*Text-book of Chem. Phys.*, p. 502) give a practically normal percentage of mucin in the skin and a very slight increase in the subcutaneous tissues and certain glands in cases of myxœdema. Mucin is found normally in a minute percentage in connective tissues, and Halliburton found twice as much in the connective tissue of young children as in adults. In the early stages of myxœdema an examination of the subcutaneous tissue reveals an excess of basement substance such as is generally met with in young connective tissue. This basement substance of connective tissue contains more mucin when it is developing than when it is replaced by fibrous tissue later, and the thickened tissues of myxœdema would seem to be more the result of a great excess of this mucin holding young connective tissue than a special infiltration by mucoid fluid. Horsley calls this a mucinous degeneration of the ground or basement substance. The Clinical Society's Report stated that this morbid process was not of a passive or atrophic, but of an irritative character, like an inflammation. The exact pathological condition at this stage is puzzling. In the later stages of myxœdema the subcutaneous connective tissues become permeated by white fibres and fat cells, and the increase of mucin is less marked. It is then called the atrophic stage of myxœdema, characterized by what Horsley calls the fibroid or cirrhotic changes. Fat may now be abundant in the interstitial spaces and in masses in such places as the supraclavicular fossa. Later, a condition of marasmus with absorption of tissues may occur (Horsley, Bourneville, and Bricon).

Grindler and others (*Beiträge zur klin. Chir.*, 1885, p. 420) have declared from autopsies of cachexia strumipriva that the condition of the subcutaneous tissue was not mucoid (*schleimiger*) degeneration and not hypertrophy of the connective tissue, but merely the richer deposit of fat. The explanation of this and other opposing statements is that different observers have examined the same process at different stages.

2. The blood is altered, causing more or less cachexia. Labreton and Vaquez (*Bul. de la Soc. mens. des hôp. de*

Paris, 1895, p. 223) find that the number of red corpuscles is reduced to 1,750,000, the white corpuscles to 4,500, and the hæmoglobin to sixty-five per cent. Murray found changes in the blood in sixteen out of twenty-three cases (*Twentieth Century Practice of Medicine*). Osler found leucocytosis. That there is evidence of toxicity of the blood, Schiff, Horsley (*British Medical Journal*, January 30 and February 6, 1892), Schnitzler, and Seitz think is indicated by increased respiration and general lowering of metabolism and vasomotor changes, showing itself by the resulting slowness and heaviness in all mental and bodily functions. Thyreoidectomized dogs die with numerous ecchymoses in the tissues, showing a change in the blood composition or the walls of the blood-vessels.

3. The temperature after a primary elevation remains subnormal, and experimental cases can only be kept alive by extra artificial warmth.

4. Acute or operative cases, and occasionally chronic cases, show certain nervous symptoms. From two to four days after thyreoidectomy animals develop fibrillary tremors, cramps, tetany, convulsions, or motor paralysis (Hughlings Jackson and Horsley). Van Gieson, examining the tissues of some of the dogs that had died a few days after thyreoidectomy had been performed by Cunningham, has found peculiar changes in the central nervous system, especially a peculiar degeneration in the nerve cells of the cortex and cord, indicating a toxæmic condition from its similarity to the changes in hydrophobia. A parenchymatous encephalitis with hyperæmia, leucocytosis, and change in the cells of the cortex has been found by Rogowitsch. Œdema and anæmia of the brain have been found by Horsley, Schiff, and others. Cases of chronic myxœdema show less of the acute nervous symptoms, but of sixty of the cases reported in the *Clinical Society's Transactions*, fifty-six showed various degrees of mental changes, varying from dullness and apathy to insanity, and twenty-nine out of sixty-six cases some motor paralysis.

This all indicates that there is some more subtle agency than the simple mechanical effect of mucin in the tissues, and that some form of poisoning is taking place as a result of suppression of the thyreoid secretion.

Now, if in a young infant the action of the thyreoid gland is suspended from any cause, many of these ordinary symptoms of myxœdema will occur just as in adults, but modified by the immature condition of the tissues of the child's body. First of all, because the mind is so undeveloped, a myxœdematous process, which in the adult gives rise merely to mental dullness and apathy, in an infant will certainly tend to produce a condition of idiocy not different in its mental condition from the varieties of idiocy already mentioned arising from other causes, and more marked the younger the child.

2. The œdema and swelling of the subcutaneous tissue will be more marked in the face, tongue, lips, and cheeks in a child than in an adult because the tissues are softer. The pseudo-lipomatous masses, the swollen belly, with an umbilical hernia seen in the photographs of almost every case on record, are more frequent in children.

3. A general change in the bony framework of the body causes the most startling contrast between the infant and the adult myxœdema. These are such symptoms as the peculiar shape of the skull, the short, thick extremities, lordosis of the spinal column, a change in the bones of the face causing a *retroussé* nose, and a general dwarfed appearance.

What is the cause of changes in bone occurring in cretinism? We do not altogether understand the relation of trophic changes in bone and cartilage to the conditions of nervous diseases and pathological changes in the central or peripheral nervous system. For instance, an infant, after a cerebral hæmorrhage or a meningo-encephalitis caused by asphyxia at birth or by a convulsion, shows a premature ossification of the skull, and within a year becomes a microcephalic idiot. Is the error in ossification a result or a cause of the mental changes?

In cretinism all autopsies on record agree in certain changes occurring in the histological development of bone quite distinct from changes occurring in rhachitis, syphilis, or osteomalacia. In the long bones the typical and almost geometrical arrangement of the rows of cells always found where hyaline cartilage is ossifying becomes completely disordered. The rows of cells become irregular, the capsules swell up, and many of the cartilage cells within shrink or disappear. The ground substance itself may become liquefied in places, and all ossification which arises normally in such cartilage is checked, and growth in a longitudinal direction stops. The most marked change is at the junction of the epiphyses and shaft. In some of the autopsies fibrous connective tissue seems to appear around the epiphyses, forming soft, white deposits. This is another example of how the myxœdematous process works by the growth of new connective tissue (*Trans. London Path. Soc.*, 1884, p. 450; Hirschberg, Ziegler's *Beiträge zur path. Anat.*, 1889). But ossification of bone from membrane, and especially from the periosteum, is exaggerated, and the bones may become abnormally thick.

Rhachitis is a very different process from this, rather resembling a chronic inflammatory change starting in the bone-forming centres. There is very early an increased formation of blood-vessels in the lower zones of cartilage, something unknown in normal ossification or in cretinism, but seen even in the rhachitis of slight degree, and excessive if it is well marked. The cartilage cells proliferate rapidly and very irregularly, especially between the epiphyses and diaphysis and beneath the periosteum.

Ossification is irregular or fails entirely. Instead of the long, regular trabecular spaces there is an excessive and irregular dilatation and a running together of medullary spaces and an absorption of bone already formed. When these vascular changes subside there occurs the formation of osteoid tissue without lime salts, which is characteristic of rhachitis, which, with the increased cell growth in the inner layers of the periosteum and between the epiphyses and diaphysis, produces the gross changes in shape which always occur in rhachitis.

To test the effect produced by removing the thyreoid gland on the tissues of very young animals, Hofmeister (*Fortschritte der Medicin*, 1892, p. 82, and *Beiträge zur*

klin. Chir., xi, 1894) took a number of rabbits from five to sixteen weeks old and removed the thyreoids from half of them, keeping the others for control examinations. The animals lived (perhaps possessing small supplementary thyreoids) and suffered very slight symptoms after the operation. From four to six weeks later he noticed that the thyreoidectomized rabbits were smaller and duller than the healthy ones, their hair was rougher and thinner, they were plumper, their bellies were more protruded, and their skulls were broader. He killed them all from two to seven months after the time of operation. Examination of the bodies showed fewer marked changes in the soft parts than he expected; no myxœdema; no special change in the viscera, excepting the ovaries and kidneys; normal spleen and thymus, but a peculiar enlargement of the hypophysis cerebri, suggesting some vicarious activity.* He found a decided retardation in the development of bone in the thyreoidectomized animals as compared with the control animals. A very marked delay of ossification of the cartilage layer which is engaged in longitudinal development of bone was found, while the thickness of the bone was not much changed. Not all the bones were affected in the same way, least of all the skull and the jaw. The spinal column was shortened, which, with the general inflation of the intestines, was the cause of the protrusion of the belly. The length of the tibial diaphysis in a rabbit four months and a half old, nine weeks after thyreoidectomy, was fifty-eight millimetres, and seventy seven millimetres in a control rabbit of the same age, or a difference in growth of a third. The older the animals the less the change.

In a four-months-old thyreoidectomized rabbit the epiphyseal line of the under end of the femur was still broad and completely cartilaginous, while a control rabbit, killed two months earlier, showed a hard, bony substance and not a trace of cartilage. This happened regularly. The synostosis of the os ilium, ischii, and pubis was delayed. The sella turcica was abnormally broad, agreeing with the hypertrophied hypophysis cerebri.

The effect on development produced by thyreoidectomy in children is shown by a case of Lancereau, a boy, aged eleven, who four years after the operation had not grown at all, and by a case reported by Grindler (*Beiträge f. klin. Chir.*, Bd. iv, 1) of a boy who in 1866, when ten years old, had had his entire thyreoid removed, and in 1884, when he died at the age of twenty-eight, had not grown at all, his height being only four feet. In his long bones the epiphyseal borders were still distinct, and the epiphyses of the trochanters were still cartilaginous.

These changes in the bones in the experimental cases, combined with the changes found in cretins at different ages, prove that the failure of cartilaginous ossification is the cause of the slow growth and peculiar shape of the extremities in cretins.

The premature ossification of the bones that develop in membrane, especially the bones of the base of the skull, with a synchondrosis of the basisphenoid suture at a very early period instead of the fifteenth year, has been repeatedly noted in autopsies, and was described as far back as 1840 by Virchow, who with others had repeatedly stated that it was the chief cause of maldevelopment and resulting symptoms in cretins. As recently as 1891 he stated that a shortening of the base of the skull caused by this premature synostosis was one of the active causes of cretinism.

But recent studies on the subject suggest that, like the premature ossification of the microcephalic idiot skulls, it may be the result, not the cause, of the general condition of cartilaginous abnormity; and it is caused, like the other symptoms, by the specific poisoning resulting from the absence of the thyreoid gland in an infant before ossification has begun.

For many years detailed descriptions have been published of autopsies of a disease of ossifying cartilage and bone, resembling both cretinism and rhachitis, known as "so-called fœtal rickets," or "micromelia chondromalacia," which in gross and microscopical anatomy seems to be about the same as congenital cretinism, but modified by what would seem to be a coincident rhachitic process. There is enough in common between the two conditions to present a somewhat similar appearance, especially at birth. The absence of the thyreoid and the presence of myxœdema in many of these older reports of "fœtal rickets" prove that they were frequently cases of cretinism, as in seven out of ten such autopsies reported by Kaufmann in a monograph on the subject.

There is no need for such terms as rhachitic pseudo-cretinism, for while rhachitis may be present to any degree, it certainly, as far as we know at present, does not cause the distinctive symptoms of cretinism.

Victor Horsley classifies sporadic cretinism as follows:

1. Congenital cretins in whom no thyreoid whatever is present, and who generally die at birth. Their appearance is typical, and the characteristic bone and cartilage changes, with their resulting deformities, are already quite far advanced at birth.

2. Cases where the process has started before birth, but there is enough thyreoid to enable the persons to live and cause a slower development of symptoms. They sometimes have a goître and generally have myxœdema. There is not much intelligence, but the physical changes come more slowly.

3. Cases where cretinism develops in early childhood, which is the common form of sporadic cretinism recorded in the cases of the last two or three years. The health and intelligence may be excellent until the second to the fifth year, and then growth and development suddenly stop and the symptoms of cretinism begin to appear. This form has more resemblance to adult myxœdema than the previous varieties, but with the stoppage of growth. It reaches its height at the fourteenth or fifteenth year. There is progressive atrophy of the thyreoid.

The ætiology of sporadic cretinism is even more obscure than that of the endemic form, for no goitrous parentage or territorial or climatic conditions offer an explanation, and every case must be judged on its own merits. From the somewhat meagre statistics on record a few facts may be

* This change in the hypophysis cerebri was found in five cases of retinism by Niepce (*Goitre et crétinisme*, Paris, 1851).

drawn. Keating (vol. i, p. 220) says: "If the father is too young or too old, or the subject of some debilitating disease, or the victim of some chronic poisoning, or a drunkard, he may produce an embryo that will die before maturity or be born a defective, unsound infant."

1. Of reported cases, several seem to be the first children of young parents, of which my own case is an example. A case is reported by Murray (*Lancet*, December, 1890) in a first child whose mother had a fright during pregnancy. Murrell (*St. Barth. Hosp. Reports*, 1893) reports a case of cretinism which was the first child of a large family. Bramwell (*Edinburgh Hosp. Reports*, vol. iii, Case 5) reports a case in a first child of young parents.

2. The parents may be one or both neurotic (Crary, *Am. Jour. of the Med. Sci.*, 1890, p. 540). Smile (*Brit. Med. Jour.*, June, 1894) mentions a child with cretinism, with a history of special worry and mental depression of the mother during pregnancy.

3. A marked alcoholic taint has been demonstrated by Downs (*Mental Affections of Childhood and Youth*, p. 83), who found in twelve cases of sporadic cretinism which he had followed that the parents were markedly alcoholic, and that in most cases the cretins must have been procreated during the active intemperance of the father. Wood (*Austral. Med. Jour.*, 1893, p. 165) reports two cretins, children of drunkards, born under the same circumstances. Mills (Starr's *Text-book of Children's Diseases*) reported a cretin nine months old, the child of an alcoholic and rheumatic father.

4. Some cases of cretinism show a record of other children in the same family with some other form of nervous disease, or some marked stigma. Ord reports among his four cases of sporadic cretinism (*Lancet*, Nov. 4, 1893) one who had a brother with spina bifida and webbed fingers. Osler (*Am. Jour. of the Med. Sci.*, 1892, p. 505), in his series of eleven cases, mentions that one was a deaf mute (Case VI) and one an epileptic (Case VII). Bramwell describes a cretin (Case IV) whose mother had "fits," and three out of six other children in the same family died at birth or soon after. J. Thompson (*Edinburgh Hosp. Reports*, 1894) reports a case of sporadic cretinism with an aunt, an uncle, and a brother who suffered from "fits." Bramwell describes a cretin, aged eight years and a half, oldest of a family of four children. The father had anterior poliomyelitis in childhood; the mother is nervous, three years older than her husband, and four children of her sister have suffered with Friedreich's ataxia.

5. Several cases are recorded where more than one child in the same family was affected with cretinism. This seems undoubtedly to indicate some hereditary cause without reference to any positive or negative family history.

Anson (*Lancet*, April 28, 1894) describes two cretins in one family.

Smile (*Brit. Med. Jour.*, June 2, 1894) mentions two cretins from one mother, who was neurotic and mentally despondent during pregnancy. Osler describes two brothers (Cases VIII and IX). T. C. Railton (*Brit. Med. Jour.*, March 9, 1891) reported two brothers, since cured by thyreoid treatment. Jones (*Lancet*, August, 1890) reported a cases, aged two years, son of an intemperate father, whose brother was beginning to develop cretinism.

Stirling (Bramwell's *Atlas of Clinical Medicine*) records three girls and one boy in a family of eleven who were cretins.

6. A history of close intermarriage of parents I have only found in the case of a cretin reported by Osler (Case I), where the parents were first cousins, and in a case reported by Ord (*Lancet*, Nov. 4, 1893), where they were also first cousins.

7. Bramwell (*Brit. Med. Jour.*, Jan. 6, 1894) states that he has met a number of cases of sporadic cretinism in the more wretched, squalid slums of Edinburgh, where it is so common as to almost be endemic. He believes that the poor food, want, and unhealthy dwellings render the parents liable to produce children who are cretins.

Of several painstaking and accurate histories which were unable to establish any definite cause for the condition of cretinism, the following may be mentioned: C. W. Townsend (*Arch. of Pæd.*, 1892, p. 825) reports a case of cretinism with the parents and other children healthy. Isler (*Internat. Med. Mag.*, December, 1894), Paterson (*Lancet*, November, 1893), and Lloyd (*Internat. Clinic*, 1892, vol. ii, p. 113) report cases with the family histories negative.

Northrup (*Arch. Pæd.*, 1894, p. 793) describes two cases with negative family history.

Osler, in the series of eleven cases which he reports, gives five with a strictly negative family history.

These are cases with absolutely unquestionable family history, and in many of them any hereditary element seems highly improbable. In some of these the probable explanation is that it is a case of atavism from unknown cause in a child of seemingly healthy antecedents. In others of these doubtful cases an unnoticed intercurrent disease of the thyreoid gland is the probable explanation. Ashby and Wright (*Children's Diseases*, p. 500) note cases of cretinism with healthy antecedents where the children were well until they suffered from measles or typhoid fever. He mentions the case of a boy who was well and perfectly healthy until seven years old, when he had typhoid fever. There then developed cretin physiognomy and symptoms. He mentions a case of Fletcher's, that of a child which was healthy until it had an attack of whooping-cough at twenty months, when the cretinism began. Osler (Case II) reports a case of cretinism which dated from an attack of enteritis in the first year. Bramwell (Case III, *Edinburgh Hosp. Reports*, vol. iii) records a case with a previous history of a fever and diarrhœa. Jeanselme (*Gaz. des hôpitaux*, No. 15, 1895) reports an acute thyreoiditis in an adult following typhoid fever, with presence of typhoid bacilli and streptococci in the thyreoid gland. He also reports cases of thyreoiditis following gastro-intestinal troubles, bronchitis, influenza, and pneumonia. Virchow and Zellner have traced a connection between malarial fever and acute affections of the thyreoid. Mygend (*Jour. de laryngol.*, March, 1895) records suppurative thyreoiditis, a subacute form of which he has observed in seventeen cases, ending in resolution and characterized by a vague pain in the neck and swelling

hat subsides after the third day. Semon mentions a case of thyreoiditis which alternated with orchitis (Heath's *Dictionary of Surgery*, art. on Diseases of the Thyreoid Gland).

Some of these obscure cases of sporadic cretinism which appear later in childhood very likely may have had the initial atrophy started by some acute or subacute process of his nature. This is all the more likely, because the shiftless, ignorant class of the population who produce most of the cases of sporadic cretinism are not noted for very accurate observations of the various "sore throats" that occur in their offspring.

In conclusion we wish to emphasize, first, that the symptoms of cretinism are to be explained as the result of the myxœdematous process in the undeveloped tissues of an infant. Second, a scientific application of the principles of heredity by such methods as have been used in such subjects as deaf-mutism, idiocy, and other nervous diseases will demonstrate similar relations and yield similar results in cretinism. Though it is as false to infer on general principles that heredity must be the cause of any doubtful condition as to deny it simply because the "family history is negative," an hereditary ætiology even in difficult cases may sometimes be proved if one carefully takes into consideration not only such general diseases of the parents as tuberculosis, malignant new growths, and various nervous diseases, but all possible stigmata and bodily and mental abnormities which may appear in the different members of the family in its various branches, if possible, in three generations.

162 West Seventy-third Street.

A CASE OF ACUTE BULBAR PARALYSIS,

WITH REMARKS ON ITS PATHOLOGY AND DIAGNOSIS.

By ERNEST W. AUZAL, M. D.

The number of contributions to medical literature on the subject of acute bulbar paralysis is a limited one. For our knowledge of its pathological anatomy and symptomatology we are indebted chiefly to the descriptions given by Leyden, Hallopeau, Lichtheim, Erb, Schwalbe, Senator, Hughlings Jackson, Oppenheim, Gowers, and Etter, whose cases have, for the most part, afforded an opportunity of post-mortem examination. In the majority of instances the pathological changes had their origin in the blood-vessels which had become obliterated by thrombosis or, exceptionally, by embolism. Multiple foci of softening, of varying extent, were most frequently found. In rarer cases hæmorrhages (from vascular disease or traumatism), compression by tumor, or an acute or subacute polioencephalitis inferior, constituted the lesions that gave rise to the paralysis. The gravity of lesions of the medulla oblongata is easily understood when it is remembered that within a narrow space it not only gives passage to the fibres that connect the brain with the spinal cord, but that it also contains the centres of most of the cranial nerves, and especially those which control the cardiac and respiratory functions.

The case I am about to describe is of considerable clinical interest, presenting, as it does, a well-defined and practically typical picture of acute unilateral bulbar paralysis. It demonstrates, in addition, the efficacy of treatment with the iodides which I regard as no less valuable (in smaller doses) in angeio-sclerosis than in syphilitic endarteritis and the sclerotic changes following it.

Mr. J. S. D., thirty-nine years of age, unmarried, vocal teacher, was referred to me on the 17th of last October, and gave the following history:

Both parents, as well as seventeen brothers and sisters, are still living and in good health. He had measles, whooping-cough, and varioloid in his childhood. In 1877 he had a sunstroke, in 1886 rheumatic gout, and in 1889 a mild attack of influenza. For the greater part of his life, up to three years ago, he has suffered from what he calls bilious headaches. His occupation has never exposed him to mental or physical overwork, but his habits have, he admits, not infrequently led to alimentary excesses, especially during his operatic career. He has always used stimulants very moderately, however, and has never been addicted to the use of tobacco. Denies ever having been infected with syphilis.

Three weeks before coming under my observation he was seized during the night with a dull pain in the back of the head and neck, with dizziness and ringing in the right ear. Dimness of vision, together with an indisposition to mental and bodily exertion, had been coming on, he thinks, for three or four months. He found that the dizziness disappeared when he was in the recumbent posture, but that his whole body swayed sideways when he turned over on the left side Three days later he noticed some embarrassment in swallowing and a numbness of the right foot.

These troubles continued unchanged until the morning of the tenth day following, when he awoke with a numbness and tingling in the right half of his face and in the right arm and leg. The lips and tongue felt stiff, and the difficulty in swallowing had become more pronounced. His discomfort was increased by difficulty in speech, shortness of breath, and by seeing objects double. He also noticed that his head was inclined somewhat to one side, and that the back of his neck, the right arm and leg were weak. Walking had become so unsteady that he was unable to get about unless he was supported. For a day or two his mind was somewhat confused, so that he did not remember clearly afterward what he had said or done during that time. Nausea or vomiting has at no time been present, and there has been no fever. Sleep has been poor since he was taken ill.

Status Præsens.—Patient is somewhat under medium height, fairly well nourished, of active, nervous temperament, and looks at least ten years older than he is. The radial and temporal arteries are rigid, the latter markedly serpentine. There exists some enlargement of the præcordial area of dullness, and the second sound is accentuated, but otherwise no cardiac abnormity can be made out. The pulse is not altered in frequency or rhythm. On the part of the lungs and abdominal organs no morbid signs are to be detected, and evidences of constitutional syphilis are wanting. The sphincters are intact. The urine is normal in quantity and contains neither albumin nor sugar. The existing amblyopia does not appear to depend upon any changes of the optic papilla which an ophthalmoscopic examination shows to be in normal condition. The cephalalgia is occipital, extending down the neck, and not subject to exacerbation; it has the character of a dull ache. Psychically, he presents nothing unusual beyond a great depression and an inclination to weep at the slightest provocation.

The head is slightly inclined to the left. When the patient is standing or sitting it falls forward, and in order to straighten it he has to resort to the use of his hands. The turning of the head to either side is not impeded, however, and passive movements are readily executed. The vertigo is increased by turning it to the left.

The movements of the right external rectus are weak, and efforts to turn the eye outward give rise to nystagmic twitching. Diplopia is marked. The pupils are equal and moderately contracted; they react to light and accommodation. The frontal muscles contract symmetrically, but, owing to weakness of the orbicularis palpebrarum, the right eye can not be closed as firmly as the left; the right naso-labial fold is somewhat effaced; the corner of the mouth, slightly opened, hangs down a little on the same side and permits a constant dribbling of saliva, especially when he is lying down. The soft palate appears lower on the right and slightly drawn toward the opposite side, but the uvula is not deflected.

Owing to paralysis of the right half of the tongue, deglutition and speech are interfered with. Food can be moved about in the mouth only with difficulty, and articulation is indistinct, particularly as regards the pronunciation of the labials and linguals. It is only with the aid of a draught of water or by pushing it backward with the finger that he is able to transfer his food to the pharynx. When at rest within the buccal cavity the tongue shows nothing abnormal, but deviates to the right when protruded. The voice is somewhat raucous and dyspnœa is still complained of. The muscles supplied by the motor portion of the fifth nerve are intact.

There exists a feebleness of the extremities of the right side. Muscular exertion, even the most moderate, is followed by great fatigue which can not be wholly attributed to the dyspnœa from which he is suffering. No tremor, either of the tongue or extremities, is present.

The sensory disturbances consist in numbness and tingling of the right half of the face and corresponding mucous membranes, as well as of the right arm and leg. Objectively, no alteration of sensation is discoverable beyond a trivial hypæsthesia on the same side. Except in the right half of the tongue, the tactile sense is not affected, and there is no dissociation of sensibility.

The sense of taste is impaired in the right half of the tongue, the patient being unable to distinguish with certainty sweet, bitter, and acid substances. The soft palate, tonsil, and upper pharynx are somewhat anæsthetic on the right side. Hearing is diminished in the right ear, but the sense of smell is not affected.

The gait is titubating, with a tendency to stagger toward the right. It is so marked that walking is impossible without assistance. When he is asked to stand with his eyes closed, the ataxia is so great as to cause him to fall (to the right). In order to avoid staggering he enlarges his basis of sustentation by widely separating his feet and keeps a fixed point in view in front of him. Being conscious of the extent and direction of the movements he executes in walking, he does not watch his feet as he would do were the ataxia of the locomotor type. The inco-ordination does not extend to the upper extremities.

The cutaneous and tendon reflexes are not altered; there is no exaggeration of the masseteric reflex.

Under the use of iodide of potassium, appropriate diet, and galvanization, at a later period, of the nucha and through the mastoid processes, as advocated by Strümpell and Oppenheim, the symptoms have gradually subsided, so that now, five months since the beginning of treatment, only slight numbness and tingling of the tips of the fingers of the right hand remain. The vision has been completely restored and his lacrymose frame of mind has given place to one of comparative impassibility.

The varying distribution of the vascular supply of the medulla oblongata has made it impossible so far to separate into syndromal groups the disturbances that arise from arterial obstruction. But the frequent anomalies of arterial distribution do not form the only obstacle to such a separation; it is largely upon the multiplicity and situation of the points of obstruction and the shape, which is often irregular, of the necrobiotic (or hæmorrhagic) foci that the symptomatology depends. That mere narrowing of the lumen of a vessel, altered by atheromatous or endarteritic processes, may, by retarding the blood current and favoring coagulative adhesions, be the cause of morbid symptoms is readily apparent. The possibility of compression by rigid, dilated, and frequently tortuous sclerotic vessels is another factor to be taken into account.

According to Charpy, the floor of the fourth ventricle derives its blood supply from two different sources: the upper half, which contains the nuclei of the facial, abducens, and trigeminus, receives its nutrient vessels from the basilar artery; the lower half is supplied by the ventricular branches of the anterior and posterior spinal arteries which are given off by the vertebral. An occlusion of the basilar would therefore, when not compensated by collateral circulation, give rise to bilateral lesions, whereas an obliteration of one of the vertebral arteries would be productive of unilateral lesions.

Duret, whose elaborate researches on this subject, published in 1873, have in the main been confirmed by those of

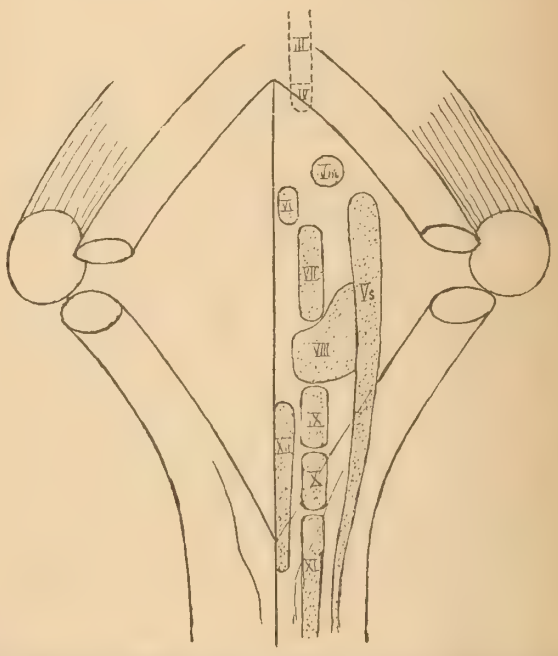


Diagram showing arrangement of nuclei in floor of fourth ventricle (right side). III, motor oculi; IV, patheticus; Vm, motor nucleus of trigeminus (locus cæruleus); Vs, sensory (descending) root of trigeminus; VI, abducens; VII, facial; VIII, auditory; IX, glosso-pharyngeus; X, vagus; XI, spinal accessory; XII, hypoglossus.

Adamkiewicz, divides the vessels of the medulla oblongata —all of them branches of the vertebral artery—into (1) the

radicular arteries, which divide into two branches—one accompanying the nerve root to the periphery, the other following it to its nucleus; (2) the median (or nuclear) arteries, of which some, coming from the anterior spinal, supply the nuclei of the spinal accessory, hypoglossal, and inferior facial, while others supply the pneumogastric, glossopharyngeal, and auditory nuclei, and others again, given off by the basilar, pass across the fibres of the pons to reach the nuclei of the superior facial, abducens, patheticus, and motor oculi; (3) arteries of the remaining portions of the medulla oblongata, which take their origin from the vertebral, anterior spinal, and inferior cerebellar arteries, and are distributed to the olivary bodies, pyramids, lateral tracts, and corpora restiformia. The last two receive their supply from the inferior cerebellar branch.

How are we to interpret the complexus of symptoms I have described? The mode of onset and character of the disease, the evidences of arterio-sclerosis presented by the patient, and the steady improvement under treatment justify the conclusion that it was caused by thrombotic obstruction of the right vertebral artery. It would account for the involvement, more or less pronounced, of the hypoglossal, vago-accessory, glosso-pharyngeal, auditory, abducens, facial, and sensory trigeminus, as well as for the hemiparesis and hemiparæsthesia of the right side. The accompanying diagram will serve to recall the arrangement of the nuclei in the floor of the fourth ventricle. It is safe to conclude, from the absence of any appreciable source of embolism and from the existence of prodromal symptoms for some length of time, that the obstruction was not due to an embolus, which, besides, rarely passes into the vertebral artery, and in that event is more apt to plug the left branch.

It is obviously impossible to locate with accuracy the seat of the lesion that led to the right hemiparesis. Whether, in unilateral affections of the medulla oblongata, the hemiplegia is direct or alternate depends not alone upon the situation of the diseased focus relative to the motor decussation—*i. e.*, upon its situation above or below this—but also upon the seat of the obstruction (in cases of thrombosis or embolism) above or below the point at which the anterior spinal artery is given off. The direct hemiparesis may have been due in this instance to an encroachment upon the motor fibres below their decussation, or, what appears to me more probable, to a lesion of the direct pyramidal tract above that point. The latter view seems the more acceptable in the light of the recent discovery of Jacobsohn (*Neurol. Ctrlbl.*, 1895, No. 8, p. 348), who has found that the fibres of the direct pyramidal tract are not intermingled with those of the crossed pyramidal tract, but that in their entire course through the medulla oblongata they occupy the lateral angle of the pyramids. There is no satisfactory evidence showing that they cross at successive levels of the spinal cord and enter the anterior cornua of the opposite side; such a conception has always seemed to me, on physiological grounds at least, open to doubt. Competent observers have of late called it into question, and advanced the opinion that the fibres terminated in the gray matter of the same side. If, as has been believed hitherto, they do not reach below the middle or lower dorsal region, my conjecture would leave the paresis of the lower extremity still unexplained. Quite recently, however, at a meeting of the *Société de biologie*, Déjerine and Thomas (*Bulletin médical*, 1896, No. 13; *Médecine moderne*, 1896, No. 13) have been able to demonstrate, by a series of sections treated according to Marchi's method, that the column of Türck can be traced as far as the root of the fourth sacral nerve. From the lower dorsal region downward it appeared in the sections no longer in the shape of a comma, but is a small mass in front of the anterior commissure.

How great the difficulty in accounting for unilateral paralysis or anæsthesia in pontine or bulbar affections can be is shown by the case of Langdon (*Brain*, 1895, lxxii), in which compression by a tumor (fibro-cystoma of pons and cerebellum) above both the motor and sensory decussations produced motor and sensory disturbances on the same side. The author attempts to account for them by assuming that they were "due to a *contre-coup* effect—*i. e.*, to pressure by the tumor of the right periphery of the medulla against the comparatively acute margin of the foramen magnum at a point above (before) the motor decussation and also above (after) the sensory (fillet) decussation." Another case in point is that reported by Senator (*Arch. f. Psych. u. Nervenkrh.*, 1882, xi, p. 713), in which a focus of softening in the left half of the medulla oblongata, one centimetre in its longest diameter, caused, among other symptoms, crossed hemianæsthesia affecting the left face and right extremities.

Could the syndrome observed in the patient have originated in an extrabulbar lesion, such as an aneurysm of the vertebral artery or a neoplasm? A growth of this kind, when it compresses the cranial nerves and the pyramidal tract of the same side below its decussation, may produce peripheral paralysis of the cranial nerves with hemiplegia on the same side, but, in view of the clinical history, especially the acute development of the headache and the absence of vomiting, it is unlikely that this was the case. Moreover, the prompt results of the treatment speak against the existence of an aneurysm or any other form of tumor, except a gumma, which would, however, have required far more energetic medication than my patient has been subjected to.

A striking feature of the case was the extreme incoordination. As a result of his experiments on the frog, Foster, in his *Text-book of Physiology*, long ago expressed the opinion that in the mammal as well as in the frog the medulla oblongata was largely concerned in the co-ordination of movements. Anatomico-clinical facts have since made it evident that it contains a region whose lesion produces disturbance of equilibration. It is probable that this region is to be found in the bulbar endings of the posterior columns of the spinal cord. Oppenheim (*Lehrbuch der Nervenkrankheiten*, 1894, p. 606) is inclined to place it in the interolivary tract, and perhaps in the corpus restiforme. Ataxia of the "cerebellar type" has been observed in connection with a lesion of the corpus olivare. The case of Senator's, previously cited, in which a focus of softening was found in the left half of the medulla ob-

longata, showed a marked tendency to fall to the left. Dinkler (*Deutsche Zeitschr. f. Nervenkrh.*, vii, 1895, p. 465) has reported a case of acute hæmorrhagic polioencephalitis inferior, the result of cranial traumatism, in which, in addition to a train of symptoms indicative of bulbar involvement, there were a staggering gait and an occasional tendency to fall. The patient succumbed two years and a half after he had received the injury, and the autopsy revealed numerous small extravasations in the floor of the fourth ventricle, particularly noticeable in the nuclei of the fifth, eighth, and tenth nerves, and a cellular infiltration of the walls of the blood-vessels. Hæmorrhages existed also in the posterior cornua of the cervical spinal cord, but with the exception of a diffuse cerebro-meningeal hyperæmia no other lesions were found in the nerve centers. It is interesting to note in this connection that several authors, like Luciani, Dupuy, Eisenlohr, Bristowe, and Bruns, contrary to the view generally held, do not regard inco-ordination as pathognomonic of disease of the cerebellum, whether this involves the vermis or not. Their experiences are in accord with those of Friedeberg (*Berliner klin. Wochenschr.*, 1895, No. 33), who found that, out of nine cases of cerebellar disease the diagnosis of which was verified by the autopsy, only two showed an ataxic gait.

While a paresis of the right sterno cleido mastoid and trapezius muscles—the latter in so far as its clavicular portion, innervated by the spinal accessory, is concerned—would explain the oblique position of the head, it is not sufficient to account for the weakness of the posterior cervical muscles which, next to the difficult deglutition, dysarthria, and inco-ordination, seemed to the patient the most formidable symptom. There was no evidence that the drooping of the head was due to an involvement of both trapezii.

Together with the proneness to general muscular exhaustion, it recalls the form of bulbar paralysis without anatomical lesions, which has been studied by a number of observers, chief among them Wilks, Erb, Oppenheim, Shaw, Goldflam, Hoppe, and, more recently, by Pineles, Jolly, Murri, and Strümpell, of whom the last named has published an exhaustive paper treating of this topic a short time since (*Deutsche Zeitschr. f. Nervenhkr.*, 1896, viii, p. 16). This progressive and habitually fatal disease is characterized by an abnormal tendency to muscular fatigue, and has for this reason been termed asthenic bulbar paralysis by Strümpell and myasthenia gravis pseudo-paralytica by Jolly. The paresis affects not only the muscles of mastication and deglutition, thereby producing dysphagia and dysarthria, but also those of the trunk, extremities, and notably of the back of the neck. Ptosis, diplopia, and disturbed innervation of the upper and lower facial nerves have been the rule in the cases on record, while sensory and psychical disorders have been absent or very slight.

The absence of fibrillary tremor and atrophy, the presence of sensory disorders, and the fact that the symptoms attain their maximum within a very short period of time after their inception, sufficiently distinguish, I think, acute (bilateral) bulbar paralysis from the labio-glosso-laryngeal paralysis of Duchenne. Its differentiation, however, from the labio-glosso-laryngeal paralysis of cerebral origin, or pseudo-bulbar paralysis, may be attended with difficulty. Before the bulbar symptoms make their appearance in the latter affection, repeated apoplectic attacks have generally occurred and, as a rule, the lower extremities have been found to be more affected than the upper, in which there is often a mere motor weakness. In two cases I had an opportunity of observing several months ago in Professor Raymond's clinic at the Salpêtrière a rapid amelioration of the hemiplegic symptoms took place, while the bulbar phenomena remained unimproved. This is, indeed, the usual course of the malady, although cases have been reported in which the apoplectic seizure and hemiplegia were wanting, the bulbar symptoms appearing *d'emblée*.

Pseudo-bulbar paralysis depends, in the large majority of cases, upon symmetrical lesions of both cerebral hemispheres, the foci of softening being seldom cortical, but mostly in or about the basal ganglia, notably in the external portion of the lenticular nucleus, the putamen (Grasset et Rauzier, *Maladies du système nerveux*, 1894, ii, p. 26). They have also been found in the centrum ovale, cerebellum, and pons. Unlike acute bulbar paralysis, in which the psychical manifestations are limited to a tendency to weeping or, less often, to laughing (Oppenheim), it is always associated with impairment of the intelligence, with varying degrees of dementia, confusion, excitability, or loss of memory. The general sensation as well as the special senses are almost always intact, although Oppenheim and Siemerling have noted optic changes. Cephalalgia, vertigo, disorders of the ocular muscles, and cardio-pulmonary troubles are absent, and laryngeal symptoms seem to be exceptional.

When ushered in by an apoplectoid ictus, the bulbar form of disseminated sclerosis may assume the character of an acute bulbar paralysis, but a consideration of the patient's age, the mode of evolution, and the presence of intention tremor will be sufficient to make the differential diagnosis. Ataxia occurs in this disease only when it is complicated with tabes.

In the course of syringomyelia localized in the medulla oblongata, of which the chief symptoms are troubles of speech and deglutition, apoplectoid attacks are likewise not infrequent, and the disease may for this reason bear a close resemblance to acute bulbar paralysis. The further progress of the syringomyelia, its characteristic sensory disorders, and the muscular atrophies will remove the doubt.

As regards the diagnosis from tabes dorsalis, a confusion is scarcely possible even when, as is sometimes the case, the vago-accessorius and sensory trigeminus are implicated and vertigo exists. The same may be said of those varieties of amyotrophic lateral sclerosis and acute ascending paralysis (Landry's paralysis) which begin with bulbar symptoms.

It is well to bear in mind, finally, that there is hardly an affection of the nervous system, acute bulbar paralysis not excepted, which hysteria may not simulate.

46 West Thirty-sixth Street.

SALOPHEN IN ACUTE ARTICULAR RHEUMATISM.

By HARRY S. PEARSE, M. D.,
ALBANY, N. Y.

Since 1875, when Buss and Reiss first began to use salicylic acid in rheumatism, the disease has been effectually controlled. After its discovery in 1838 it was used as an antipyretic, and it is presumable that in its employment against the high temperatures of rheumatism these physicians hit upon its happy specific action in this disease. It revolutionized the treatment of rheumatism, and for twenty years salicylic acid, pure and in different combinations, has been the mainstay of the physician.

It did not, however, take the observing members of the profession long to learn that the acid could not be given with impunity. Protracted and energetic use of it was found to produce intense gastric irritation, renal congestion, and even acute parenchymatous nephritis, severe cardiac depression, and acute delirium.

The toxic and irritating effects of the acid, ingested in the pure state, led to the use of combinations, and stimulated the chemists to find one devoid of poisonous qualities, but quite as energetic in its action. Salicylate of sodium was found less irritating to the gastric and intestinal mucous membranes, but did produce delirium, albuminuria, and severe depression. Oil of gaultheria had all the dis advantages of the pure acid when given in sufficient antirrheumatic doses. Salol, the phenic ether of salicylic acid, was too expensive, and also productive of renal irritation Broken up in the intestine into phenic and salicylic elements, the former produced carboluria and often albuminuria. The latest and perhaps the most satisfactory compound is "salophen," obtained by treating paranitrophenol with salicylic acid. It was discovered in 1891 by Bayer, and its physiological actions were worked out and promulgated in that and the succeeding year by Siebel. He found that it required an alkaline medium for its decomposition, and that it was therefore insoluble in the gastric juices, but freely soluble in the intestinal fluids. It decomposed in the intestine into salicylic acid, of which it contained fifty per cent., and acetylpara-amidophenol; the decomposition, a slow one, placed the irritating effect of the acid at nil and the acetylpara-amidophenol, combining with a radicle, formed an insoluble compound.

It would seem upon first thought that this would do away with the toxic principles found so objectionable in the other compounds, and, indeed, clinical employment of the drug has proved this almost beyond a doubt

As stated above, salicylic acid and its salts have been considered specifics in acute articular rheumatism, and from 1875 to 1892 it was routine work in hospitals and private practice to start the treatment of each case with this drug. Since 1892 it has gradually become routine in practice, especially in hospital work, to start with salophen.

When I was house physician in Bellevue Hospital in 1895, under Dr. Dana, Dr. Fowler, and Dr. Lambert, that was my rule, as indeed it was the custom of all the house physicians upon the same division dating back into 1892, excluding 1894, which will be explained farther on. Of twenty-three cases that came under my observation, seventeen were acute, two subacute, and four chronic in character. Salophen was used in fourteen of the seventeen acute cases, and in the following synopsis of these, with the conclusions drawn from them, I can only supplement the excellent clinical report of ten cases in the same wards in 1892 and 1893 by Dr. D. B. Hardenbergh.* In the three remaining acute cases salicylate of sodium was used exclusively, with good results in two and fair results in one. In the subacute and chronic forms iodide of potassium, wine of colchicum, iron, arsenic, and strychnine were employed.

Case I.—O. B., admitted August 19th; draughtsman, aged twenty-eight years. History of previous attacks. Pain, redness, swelling, and tenderness of left knee. Temperature, 101·2°; pulse, 94; respiration, 24.

Treatment.—Salophen, fifteen grains; bicarbonate of sodium, fifteen grains, every four hours; a five-per-cent. solution of menthol in alcohol to the affected joint.

August 20th.—Temperature, pulse, and respiration normal.

25th.—Discharged, cured.

Case II.—J. W., admitted May 3d; accountant, aged thirty-six. History of previous attacks. Attack previous to present one accompanied by acute amygdalitis; present one by slight amygdalitis also. Stiffness, redness, swelling, and pain in both wrists, ankles, and knees. Attack severe. Temperature, 103°; pulse, 96; respiration, 20.

Treatment.—Salophen, fifteen grains; bicarbonate of sodium, fifteen grains, every four hours; Epsom salts as a cathartic; sodium bromide as a hypnotic; menthol dressing to joints.

May 8th.—Menthol dressings removed. Joint symptoms less severe. Temperature, pulse, and respiration normal.

14th.—Cured. Patient remained in the ward as a helper. No recurrence of attacks. Use of salophen continued for a month.

Case III.—J. P., admitted June 3d; laborer, aged thirty years. No previous attacks. Both knee joints affected. Intense pain. Restlessness. Temperature, 102°; pulse, 96; respiration, 26.

Treatment.—Salophen, fifteen grains; bicarbonate of sodium, fifteen grains, every four hours; U. S. solution of morphine, two drachms at night as a narcotic; menthol dressing to joints.

June 7th.—Temperature, pulse, and respiration normal. Sodium bromide substituted for the morphine; rheumatic ointment (salicylic acid, oil of turpentine, lanolin, of each three drachms; lard, three ounces) for menthol dressing.

June 17th.—Discharged, cured.

Case IV.—G. S., admitted June 30th; bartender, aged thirty-three years. History of previous attacks. Wrist and knee joints affected. Highest temperature, pulse, and respiration (second day after admission), 104·2°, 108, and 24.

Treatment.—Salophen, fifteen grains; bicarbonate of sodium, fifteen grains, every four hours; menthol dressing to joints.

July 4th.—Temperature, pulse, and respiration normal.

11th.—Discharged, cured.

Case V.—T. H., admitted May 1st; laborer, aged twenty-

* Salophen in Acute Articular Rheumatism, *Med. Record*, July 29, 1893.

five years. No previous attacks. Left knee affected. Temperature, 102·6°; pulse, 108; respiration, 24.

Treatment.—Salophen, fifteen grains; bicarbonate of sodium, fifteen grains, every four hours; menthol dressing to joint.

May 7th.—Temperature, pulse, and respiration normal.

9th.—Discharged, cured.

Case VI.—J. W., admitted March 29th; minor, aged twelve years. No previous attacks. Left knee affected—some effusion. Intense pain. Temperature, 105·2°; pulse, 140; respiration, 34.

Treatment.—Salophen, ten grains; bicarbonate of sodium, fifteen grains, every four hours; menthol dressing to joint.

March 30th.—9 A.M., temperature, 102·6°; pulse, 108; respiration, 26. 9 P.M., temperature, 105·6°; pulse, 134; respiration, 36.

Restlessness and slight delirium, due to hyperpyrexia.

31st.—Salicylate of sodium, ten grains every four hours, substituted for salophen.

April 1st.—Temperature, pulse, and respiration normal.

11th.—Local and general symptoms returned after a remission of five or six days, with a temperature curve septic in character. Gradual swelling of knee with fluctuation. Aspiration showed purulent fluid. Patient transferred to surgical ward, knee opened and drained.

Case VII.—A. B., admitted May 9th; laborer, aged thirty-five years. No previous attacks. Hands, knees, and wrists affected. Temperature, 103·6°; pulse, 84; respiration, 24.

Treatment.—Salicylate of sodium, twenty grains; bicarbonate of sodium, twenty grains, every four hours.

May 13th.—Salicylate of sodium, five grains every two hours; menthol dressing to joints.

22d.—Temperature, 102·8°; pulse, 84; respiration, 20. No abatement of symptoms, either local or general. Salophen, fifteen grains every four hours, substituted for salicylate of sodium. Bromide of sodium as a sedative and hypnotic.

26th.—Temperature, pulse, and respiration normal. Subsidence of symptoms.

June 26th.—Discharged, cured.

Case VIII.—J. T., admitted June 30th; laborer, aged thirty years. No previous attacks. Attack slight. Right ankle affected. Temperature, 100·4°; pulse, 100; respiration, 24.

Treatment.—Salophen, fifteen grains; bicarbonate of sodium, fifteen grains, every four hours.

July 3d.—Temperature, pulse, and respiration normal. Transferred. Convalescent.

Case IX.—J. T., admitted July 23d; laborer, aged twenty-six years. No previous attacks. Present attack slight. Temperature, 101·2°; pulse, 76; respiration, 20.

Treatment.—Salophen, fifteen grains; bicarbonate of sodium, fifteen grains, every four hours.

July 24th.—Temperature, pulse, and respiration normal.

29th.—Transferred. Convalescent.

Case X.—A. R., admitted August 8th; laborer, aged twenty-four years. No previous attacks. Local and general symptoms well marked. Knee, ankle, and elbow joints affected. Considerable effusion in left knee and elbow. Temperature, 104·4°; pulse, 128; respiration, 30.

Treatment.—Salophen, fifteen grains; bicarbonate of sodium, fifteen grains, every four hours. Sponge compress (sponges wet with five-per-cent. menthol solution) to left knee and elbow. Menthol dressing to other affected joints.

August 14th.—Temperature, pulse, and respiration normal. Acute symptoms subsided.

23d.—Discharged, cured.

Case XI.—F. L., admitted June 7th; seamstress, aged twenty-one years. Previous attacks. Wrist and ankle joints affected. Attack severe. Temperature, 102·8°; pulse, 100; respiration, 28.

Treatment.—Salophen, fifteen grains; bicarbonate of sodium, fifteen grains, every four hours. Bromide of sodium as a sedative. Rheumatic ointment to joints.

June 11th.—Temperature, pulse, and respiration normal. Local symptoms less severe.

16th.—Discharged, cured.

Case XII.—M. S., admitted August 24th; laborer; aged thirty-six years. No previous attacks. Left knee affected. Local symptoms severe. Temperature, 103·2°; pulse, 112; respiration, 26.

Treatment.—Salophen, fifteen grains; bicarbonate of sodium, fifteen grains, every four hours.

August 27th.—Acute symptoms have subsided.

30th.—Temperature, pulse, and respiration normal.

September 5th.—Discharged, cured.

Case XIII.—M. H., admitted March 25th; servant, aged eighteen years. No previous attacks. Local symptoms severe. Ankle, knee, and wrist joints affected. Temperature, 100°; pulse, 80; respiration, 20.

Treatment.—Salophen, fifteen grains; bicarbonate of sodium, fifteen grains, every four hours; menthol dressing to joints.

March 30th.—No improvement. Salicylate of sodium, fifteen grains every four hours, substituted for salophen.

April 9th.—No improvement. Temperature, 100·4°; pulse, 84; respiration, 24. Complained of headache.

15th.—No improvement. Oil of gaultheria, ten minims every four hours, substituted for salicylate of sodium; rheumatic ointment for menthol dressing.

15th.—Severe headache. Dullness of intellect. Œdema of legs. Pain in left side. Well-marked aortic regurgitant murmur. Diminished quantity of urine, which was of high specific gravity, contained a diminished amount of urea with renal epithelium. Intense dyspnœa. Gaultheria stopped, patient put upon the use of digitalis, diuretics, and diaphoretics.

28th.—Acute renal and cardiac symptoms have subsided. Urine normal.

May 4th.—Patient convalescent.

15th.—Discharged, cured.

Case XIV.—A. L., admitted May 2d; servant, aged eighteen. No previous attacks. Local and general symptoms very severe. Knee, ankle, and wrist joints affected. Temperature, 103°; pulse, 102; respiration, 28.

Treatment.—Salophen, fifteen grains; bicarbonate of sodium, fifteen grains, every four hours. Bromide of sodium as sedative. Menthol dressing to joints.

May 6th.—No improvement. Salicylate of sodium, fifteen grains, substituted for salophen, and rheumatic ointment for menthol dressing.

11th.—Violent acute delirium. Salicylate of sodium discontinued. Magendie's solution necessary. Use of salophen resumed.

18th.—No improvement. Salicylate of sodium again tried, producing acute delirium as before. Alkaline treatment tried.

24th.—No improvement. Advent of acute endocarditis and pericarditis, with septic condition and temperature of 105·8°.

31st.—Since last note a septic state has prevailed. No improvement in the heart. Patient has been comatose most of the time, and died to-day.

A review of these cases warrants some interesting deductions. Considering the first twelve cases, excluding the last two on the ground that the temperature was produced by other factors than acute articular rheumatism, the average duration of fever after beginning to use salophen was five days. According to Dr. Whipman,* in the treatment of one hundred and seventy three cases with the salicylates, the average duration of fever was 8·65 days. In one hundred and ninety cases collected by Wardner the average was 5·5 days; in one hundred and fifty six cases by Owen, 3·66 days; in fifty five cases, according to Howard in Pepper's *System*, 7·25 days; in ten by Hardenbergh, 6·11 days, treated exclusively by salophen.

According to Whipman, in one hundred and sixty-seven cases treated with the salicylates the average duration of the whole attack was 19·03 days; ten by Hardenbergh, using salophen, gave an average of ten days. In my series of twelve the average was 10·25 days. This conclusion is perhaps valueless because of the necessity of transferring some of the patients to another hospital in early convalescence to make room for incoming patients.

The average daily amount given was a drachm and a half in fifteen-grain doses every four hours. This could be continued indefinitely with no untoward effects. One patient took fifteen grains every four hours during the day for a month. With each fifteen grains of salophen, fifteen or twenty grains of bicarbonate of sodium were combined. Led by the fact that there is less probability of cardiac complications in the alkaline treatment than in any other, Dr. Flint advised the combination of the alkaline with the salicylate treatment. The same principle was followed in the use of salophen.

There were no symptoms of gastric irritation, cardiac depression, or renal or cerebral involvement in any one of the salophen cases which could be attributed directly to salophen. On the other hand, I believe that the severe acute renal congestion in Case XIII was directly attributable to the salicylate treatment, and in Case XIV upon two occasions the administration of sodium salicylate was followed by an intense acute delirium. This case was an unusual one, and no antirrheumatic treatment would subjugate the intense infection. The fatal cardiac complications, with the hyperpyrexia which developed, can be accounted for by the virulence of the poison, the susceptibility of the patient, and the signal failure of all antirrheumatic measures. Dr. Dana considered that a septic element was present, and made the statement that little could be done for severe septic cases.

I do not mean to underestimate the value of the salicylate treatment; vast clinical researches have proved its great worth, but we are all compelled to recognize the dangers attending its careless use. If salophen will act as well in a prolonged and thorough trial as it has in my small series, and continue devoid of dangerous properties, it will eventually replace completely more dangerous methods of treatment.

For the following table of the consumption of the four leading antirrheumatics in Bellevue Hospital since the advent of salophen, I am gratefully indebted to Dr. Charles Rice, chemist to the Department of Public Charities in New York:

	1892.	1893.	1894.	1895.
Acid salicylic.....lbs.	93	157	12·5	170
Sodium salicylate.....lbs.	83	87	56	60
Salophen.....oz.	8	175	None.	430
Oil of gaultheria.....lbs.	18	27¼	16¾	22

To use the doctor's words: "These figures are remarkable. It seems as if in 1894 rheumatism had been quite rare. Or else some other treatment was used."

The broad sphere of usefulness of the acid in subacute cases, in the form of ointments and as an antiseptic, accounts for the large amount used.

The field of employment of salophen in Bellevue has been confined pretty closely to acute rheumatic cases, and the increase in the amount used seems to bear testimony to its growing favor.

219 State Street.

* *Report of the Collective Investigation Committee of the British Medical Association.*

THE EYES AND THE LIVER.*

By H. H. SEABROOK, M. D.,

OPHTHALMIC SURGEON, NEW YORK EYE AND EAR INFIRMARY; ATTENDING OPHTHALMIC SURGEON, ST. LUKE'S HOSPITAL.

Among those individuals known as "medical authorities," the functions of the liver have been regarded with great respect by some, deep contempt by others. The attitude of the liver in the meantime has remained constant; it could always be found "doing business at the same old stand." It presides over the most important changes in connection with the birth of living animal tissues, and when these tissues are becoming effete, the liver is "in at the death" and aids in their burial. The functions of the bile in intestinal digestion may seem ill-defined and of subsidiary importance, yet its absence from the intestines is followed by progressive emaciation and ultimate death. That in the blood bile is a toxic agent which destroys the red globules is certain, yet the production of bile is but one of the functions of the liver; it is a blood-forming as well as blood-destroying organ; it forms glycogen, which helps to maintain animal heat, to nourish the blood and tissues, and appears to serve some important purpose in muscular action; it destroys waste and surplus albuminoids forming urea and other nitrogenous products, and not only thus disposes of the waste of muscular tissue, but in addition eliminates a product of the waste of nervous tissue, cholesterin. All poisons in the intestinal canal must fight their way through the liver in order to gain entrance into the general circulation, but just how important a part the liver plays in this combat is somewhat uncertain.

A moment's thought convinces us of the importance of disturbance of the functions of the liver, and the extreme frequency of such disturbance when we consider how often the structure of the liver must be impaired. Secondarily

* Read before the Medical Society of the County of Queens, N. Y., February 19, 1896.

deranged from diseases of other organs, it is primarily affected by pressure from corsets or belts, being displaced downward, its surface creased and the capsule thickened by attacks of perihepatitis. Such conditions are frequently found post mortem. How often is this perihepatitis diagnosticated during life? In modern life mental wear and tear, highly seasoned food, irregular meals, and sedentary habits are often combined, malt liquors are largely consumed, and many of our patients have suffered from malarial or sewer-gas poison, typhoid, syphilis, or other general infection, leaving permanent impairment of the liver.

It is my purpose to attempt to demonstrate the intimate connection between many ocular disorders and disturbed hepatic action, first by showing the eye lesions present in cases of gross liver disease, then the ocular changes in so-called functional disorders of the liver, and lastly the interdependence of functional eye and liver troubles. I believe it to be proper to assume that eye lesions associated with liver disease should be referred directly to such disease as a causative factor, whether this be primary or a secondary disorder due to gastro-intestinal causes.

Writers upon the subject of diseases of the liver mention as ocular complications only of the blindness in acute yellow atrophy and of the disturbed vision in functional derangements of the liver. Among oculists a few scattered cases of retinal hæmorrhages occurring in acute yellow atrophy or cirrhosis of the liver had been noted previous to 1882, when fifteen cases of liver disease with changes in the eye were reported,* including acute yellow atrophy, phosphorus poisoning, cirrhosis, one case of abscess, another of cyst of the gall bladder, and several of obstructive jaundice, some of these of slight degree. The most frequent ocular change consisted of retinal hæmorrhages. A second lesion described was an exudation in the retina, and post mortem examination in a case of phosphorus poisoning with liver atrophy showed signs of inflammatory action at the margin of the patches of exudation with fatty degeneration at the centre. In one case of cirrhosis that form of interstitial retinitis known as "retinitis pigmentosa" was found; the abdomen was tapped for the ascites and neuro-retinitis followed the operation. This was interesting because an attempt had previously been made to show a connection between retinitis pigmentosa and interstitial changes in other organs,† and was made more so by an account of two dogs with biliary fistula who became blind while under Professor Bischoff's observation, and in whose eyes were found circumscribed spots of atrophic chorio retinitis with œdema at their margins, and migration of pigment cells into the ocular media. The characteristic subjective symptom in the ocular disease just described is night blindness, also an ocular symptom in jaundice, as is, occasionally, yellow vision. The "torpor retinæ" in jaundice was usually referred for a long time to the action of the bile upon the nerve tissue of the retina. In 1881 the statement was advanced that night blindness and blue blindness in jaundice were identical. Red, green, and yellow rays fade with daylight, leaving blue rays, and these not acting upon the retina in cases of yellow vision, night blindness results.* Four years later Hirschberg professed to have seen yellow coloring matter in the ocular media in a case of jaundice by using daylight for the examination, others having previously failed in this demonstration, clinically and pathologically. He repeated the explanation above given of the identity of blue blindness and night blindness, apparently unmindful of its original authors.† This explanation is by no means final, since blue blindness occurs with diminished vision in diseases of the ocular fundus having no connection with the liver (retinitis albuminurica, central chorioiditis, detachment of the retina).‡

I have now under my observation a case of exudative neuro-retinitis, with hæmorrhages, in which albumin and casts have never been found in the urine as yet, although there was at one time temporary glycosuria, and there have been other signs of hepatic disease, including hypertrophy of the liver. In many cases of chronic interstitial nephritis, so called, the kidney lesion is less prominent than that of the liver, and it seems to me fully as natural to refer the hæmorrhages and exudation in the retina to the latter as to the former. Other known causes of retinal hæmorrhages are gout, septicæmia, leukæmia, anæmia, especially of the pernicious type, chronic malaria, diabetes, valvular disease of the heart, oxaluria. I merely ask you to consider how important a part the liver plays in most of these diseases. Two causes of retinal hæmorrhages I have reserved for special mention; these hæmorrhages have been known to follow upon cessation of bleeding from hæmorrhoids, and sometimes occur with uterine disease and disturbed menstruation. The connection of the retinal lesion through the intermediate organ is readily seen in the hæmorrhoidal cases, and I doubt whether specialists for the diseases of women would consider retinal hæmorrhage a "uterine reflex," fond as they are of the term. Menstrual anomalies have decided influence upon the circulation, and especially upon the portal circulation, and jaundice not infrequently occurs at the menstrual epoch. Perhaps it may not be amiss to mention this case: Following a miscarriage a woman began habitually to have a scanty menstrual flow; at each menstrual epoch marked facial jaundice and yellow vision occurred, passing off in a few days. This had been going on for years at the time the case was reported.#

Corneal ulcers occur in badly nourished individuals and are intimately connected with digestive disturbances. What part the liver may play in some of these cases is entirely problematical, and I only speak of them to emphasize a fact which deserves passing mention—viz., that one of the dogs with biliary fistula, previously referred to, had corneal ulcer. I have had many cases of iritis under my care

* Litten. *Deutsch. med. Wochenschr.*, No. 13, 1882.

† Landolt. *Arch. für Ophthalmol.*, No. xviii.

* J. Macé et W. Nicati. *Comptes rendus de l'Académie des sciences* vol. xcii, p. 1412.

† *Berl. klinisch. Wochenschr.*, vol. vii, No. 4.

‡ Simon. *Centralb. f. Augenheilk.*, 1894, p. 132; also Leber, Mauthner, and others. See also Treitel, *Arch. f. Ophthal.*, vol. xxx, part 3, p. 24, Atypical Retinitis Pigmentosa and Violet Blindness.

Hirschberg. *Berl. klin. Wochenschr.*, 1872, p. 579.

n times gone by of to me unknown origin. I did not suspect any hepatic or even digestive origin in these cases until recently. During the year I have had two cases of ritis starting in an insidious, painless manner, of slow protracted course, where the most painstaking investigation failed to show any of the known causes of systemic or ocal infection which are supposed to give rise to this disease. In both cases there was digestive disturbance and at times some jaundice. In one the eye disease began some fifteen years ago in the vascular coat (the chorioid), which corresponds posteriorly with the stroma of the iris. Hæmorrhages into the vitreous humor occurred periodically, but always at a time when little exercise was taken. Bowling, wheeling, or other violent exertion never caused these attacks, but was beneficial by causing the constipated bowels to act. The last and most severe attack yielded soon after bichloride of mercury, arsenious acid, and free Vichy drinking were ordered.

Constipation has been often noted as accompanying hæmorrhages into the vitreous; careful examination will usually discover chorioiditis in these cases. In the cases in which syphilis, a well-known cause of this lesion, can be excluded, the causation is usually obscure. Bichloride of mercury and salicylate of sodium, two well known hepatic stimulants, are of undoubted benefit in the treatment of some of these obscure cases, and decidedly good results may follow free action of the bowels. Sparing you the details of a number of cases in which there seemed good ground for supposing that the origin of the disease was mainly hepatic, permit me to give the history of one which may have some interest:

In December, 1890, I was consulted by a lady, aged sixty-four years, who had been under treatment for her liver and was still perceptibly jaundiced. Vision in the right eye was diminished to one third the normal, and there was a floating membrane from a fresh hæmorrhage into the vitreous, with some smaller opacities; incipient cortical cataract in each eye. The vitreous cleared rapidly under the bichloride of mercury, but began to again become cloudy when the drug was stopped, so that it was necessary to continue its use. It was given with three or four intermissions for nearly three months, when the tendency to relapses ceased. In six months the cataract had also disappeared. The eyes continued well until May, 1894, when there was sudden loss of vision in the left eye. Examination showed the sight to be only one fortieth of the normal in this eye, loss of vision for green in both eyes, central loss of vision for red in both. Hæmorrhage into the left optic nerve back of the entrance of the central artery of the retina was diagnosticated, as the ophthalmoscope showed nothing abnormal in the eye, with probable diabetes. Sugar was found in the urine, which, under treatment, mainly dietary, disappeared later, together with all ocular difficulty, both vision and color sense being normal in October, 1894.

Engorgement of the blood-vessels of the retina with slight haziness of its tissue is a frequent occurrence. This condition is associated with eye strain and uterine disease, and I have seen it in a considerable number of patients who had digestive disturbances, especially of the "bilious" type, or who suffered from lithæmia. I will mention one more particularly.

I recently saw a lady of sixty-one years who was suffering, her physician informed me, from "sluggish portal circulation." Color and light sense were diminished in both eyes, and the vision of the right was defective, the retina near the optic nerve in this eye being œdematous. A day or two later an attack of vomiting occurred, said to have been caused by a thirty-second of a grain of corrosive chloride of mercury, and when I saw the eyes again, within a week, the vision of the right had improved and the retina was clear. The general condition of the patient was reported as much better.

Ordinarily, an eye specialist has little opportunity for seeing cases of gross liver disease. Functional derangements of the liver are present in many of his patients, although he may remain unconscious of the fact. The eye condition most often seen by oculists in the United States is called "asthenopia" or exhaustion. This is often referred to as "eye strain," because of its frequent apparent cause. The forms of asthenopia have been classified as "accommodative," due to strain upon the muscle which, by its contraction, enables the eye to see near objects; "muscular," due to lack of proper strength or association of the extrinsic muscles which enable the eyes to work together; and "retinal," due to general disease. This classification conveys but an imperfect idea of the facts, for the retina gives out in cases of accommodative and muscular asthenopia, and from such local causes as overuse of the eyes and improper illumination, either as regards position, quality, or too little or too great intensity. On the other hand, general disease may affect ocular endurance by causing weakness of the accommodative or converging muscles or muscular inco-ordination. Again, inability to use the eyes has occasionally been due to intranasal causes, or lid inflammation, and not infrequently to mental effect or defect.

The symptoms of muscular asthenopia are the only asthenopic symptoms which can be studied in an uncomplicated manner. Most people have experienced them in suddenly changing the eyes from moving objects to stationary ones, as occurs in a comparative way when in a railroad train the view is changed from the landscape to the interior of the car; here, however, the retinal element is not entirely eliminated. In practice, I have studied them from patients who have been relieved by prismatic glasses, especially noting the effects when the habitual glasses are left off. Giddiness is the most certain symptom, then nausea, afterward headache, which is usually a dull ache below the occiput, and may be accompanied by tenderness of the muscles at the nape of the neck; this does not occur immediately upon removal of the glasses, as a rule, and is not always present, although in some cases it may be the predominant symptom. While in accommodative asthenopia the muscular factor can never be absolutely eliminated, since glasses have some effect always upon the extrinsic muscles, the accumulated experience of many observers who have directed their attention to its diagnosis and treatment shows satisfactorily that accommodative asthenopia is the most frequent and most important form of eye strain—the most important because its correction by glasses deals with defects of vision as well as sensations. Its symptoms are eye pain and exhaustion, frontal head-

ache coming on after use of the eyes, or temporal headache, usually on the side of the eye subjected to the most strain, which is commonly unequally distributed between the eyes. The symptoms of retinal asthenopia can not be separated from the others except by study of the cause, and, as before mentioned, the several forms are inextricably commingled.

These forms of headache can be distinguished from the severe localized vertical headache sometimes occurring in brain tumor, the bandlike feeling across the top of the head from anæmia, and the radiating pressure headache of nasal obstruction. They can not be distinguished from the headaches of Bright's disease, uterine difficulty, neurasthenia, or toxic poisons, like tobacco, alcohol, malaria, bile products, uric acid, etc. The reason seems to me evident; the neurologists have called attention to the fact that neurasthenia is, after all, in general due to malnutrition and imperfect assimilation of food. The character of the headache is likely to be much the same whether the nutrition of the brain and sensory nerves suffers from blood dyscrasia or vaso-motor spasm, and I believe that eye strain acts in most cases as a local irritant only, setting up headache in susceptible states of the system. While on the one hand the general, on the other the local, cause may be paramount, as a rule the causes are mixed, the ultimate cause of susceptibility being usually some disorder of nutrition. Migraine, which the eye symptoms in connection prove to be due to vaso-motor spasm, is in my experience usually markedly relieved by correction of astigmatism or the ocular muscles; yet I do not remember to have ever seen this kind of headache in patients without lithæmic symptoms; the retinal condition accompanying it may be one of irritation or exhaustion. The headache from biliousness is sometimes distinguished by the fact that it comes on early in the morning, passing off later in the day, while the ocular headache is usually, although not invariably, worse at night; yet the liver may start the headache and the eyes aggravate it.

Pain in the eye from either eye strain or biliousness is sometimes accompanied by tenderness over the ciliary body in the region of the muscle of accommodation. It is a myalgia, and we all know that pain in a muscle may be due to strain of its fibres or to disturbance of digestion, and that this effect of local strain is most often felt in "bilious" people liable to muscular rheumatism. In some cases the general malnutrition may affect the eyes in such a way as to cause a local exhaustion of the retina which so directly sets up a train of asthenopic symptoms that I find it difficult to convince the affected individual or even the family physician that the eye symptoms are not due to direct local causes. In some of these cases I am convinced of the origin of the eye symptoms only after the most careful attention to the errors of the eyes has been without good result. I refer the eye trouble to the liver when the local causes are found insufficient to account for the eye symptoms, other general causes have been eliminated, and the patient complains of poor circulation, neuralgias, and systemic disturbances beginning a day or more after ingestion of starches and sugars. In these cases there is often a yellowish tinge to the countenance and a certain form of disturbed color vision not necessarily accompanied by any visual defect or diminution of the light sense. This color defect I have found by taking the color field—that is, mapping out the peripheral boundaries of vision for each color. In these cases of biliousness or torpid liver red can be seen as far out, or nearly so, as normally; the field for green is definitely contracted, and blue, which in normal eyes can be seen further out than red, can only be seen through a small central space well within the peripheral limit of vision for red. If defective vision for blue is a sign of exhaustion or torpidity of nerve tissue, at least that of the retina, so also is erythropsia or red vision a sign of retinal irritability. I have seen two cases of red vision occurring in conditions of nervous irritability, and the second patient, if not the first, was lithæmic. Since the red vision was in each case relieved by astigmatic glasses it may have been due to local eye strain. This question should be studied in connection with urinalysis.

Reference has already been made to inco-ordination of the ocular muscles from general causes. Murchison long ago showed a connection between bilious attacks and "diplopia." I have seen defects of the ocular muscles, varying from slight weakness to paresis or even paralysis, occurring after grippe, malarial or bilious attacks, and sooner or later disappearing entirely. The severest of these attacks are probably due to œdema or hæmorrhage at the nerve centres or along the nerve trunks, since such lesions have been found in cases of diphtheria and malarial fevers with paralyses of ocular muscles, and, as has already been shown, retinal œdema and hæmorrhage occur in connection with liver disorders.

118 East Seventy-second Street.

CONGENITAL CHOREA,

*WITH REPORT OF A CASE.**

By GEORGE J. PRESTON, M. D.,

PROFESSOR OF NERVOUS DISEASES, COLLEGE OF PHYSICIANS AND SURGEONS, BALTIMORE.

The term chorea, accepting it in its modern significance, is to be regarded merely as a symptom-complex, and not as standing for a distinct and clearly defined disease. Thus we speak of chorea vulgaris, or Sydenham's chorea, post-hemiplegic chorea, senile chorea, hereditary or Huntington's chorea, electric or Dubini's chorea, etc. It is evident, from a study of the symptoms of these affections, that it is manifestly improper to designate them all as chorea, unless by chorea we mean merely certain irregular, inco-ordinate, involuntary muscular movements. This class of cases, then, characterized by irregular and inco-ordinate muscular movements beginning at birth, are classed as chorea simply for convenience, and not as implying that their pathology is the same as that of chorea vulgaris. Again, as long as there can be said to be no distinctive or constant lesion in chorea vulgaris, it is perhaps admissible to classify it clinically, and in all the different forms of so-called chorea there

* Read before the Baltimore Neurological Society.

is a general similarity in the character of the disordered movements. Chorea is essentially a disease of childhood, though it is seen at all ages, cases having been reported in persons as old as eighty years (Sinkler). From a review of the age statistics, it would seem that congenital chorea is exceedingly rare. The Collective Investigating Committee of the British Medical Association (*Brit. Med. Jour.*, February, 1887) found, after an analysis of four hundred and thirty-nine carefully reported cases, but two cases beginning under four years of age, the youngest of these being two years old. Osler (*Med. News*, 1887), in three hundred and ninety-two cases analyzed by him, met with congenital chorea but twice. One of these cases is related by Sinkler (Pepper's *System of Medicine*, vol. v). The last-named author, whose opportunities for observing chorea have been exceptionally great, states (*Nervous Diseases*, by American authors) that he has seen but two cases of congenital chorea; one of these is the case referred to above. Gray (*N. Y. Med. Jour.*, 1892) relates a case in which the movements were noted immediately after birth, but is inclined to place the case in the category of hereditary chorea. Schlesinger (*Zeit f. klin. Med.*, Bd. xx, 1892) reports a case of chorea in a man twenty-four years of age which had existed from birth. In this case, and also in one of Osler's cases, the mother was choreic at the time of the birth of the child. The following case, which has been for some time under my care, presents many interesting features:

Miss G., aged seventeen years; chorea congenita. The history of the case in general is that the mother of the patient, an unusually strong, healthy woman, who had given birth to seven children, complained of "nervousness" during this pregnancy, though there is no history of choreic movements, nor is there any history of chorea in the family anywhere. A month before her confinement a daughter was taken ill with typhoid fever, and died just a week before the birth of Miss G. The labor was easy, though there was a breech presentation. Soon after the child was born the choreiform movements were noticed, and it was supposed that there was some injury to or disease of the brain. These irregular choreic movements affected the head and extremities, and continued to grow worse for eight or ten years. For the past five or six years there has been no very marked change in the character or extent of the motion.

Status Præsens.—Miss G. is of about the size of a child of twelve. Her head is small, but perfectly symmetrical. The organs of circulation, respiration, and digestion are all normal. The menstrual function has but recently begun. The deep reflexes are a little subnormal, but all present, and the superficial reflexes are normal. Sensation is not affected in any manner. The electric reactions do not differ from the normal. The muscles, while not well developed, nowhere present any atrophy, and there is no hypertrophy even in those muscles that are and have been for seventeen years in almost constant motion.

The patient has a bright attractive face and is very intelligent. Her hearing is acute. She has myopic astigmatism, which is corrected by glasses. She is practically mute, never trying to talk. She can make some sounds, as when she laughs, but nothing that approximates phonation. Some years ago she made sounds that were intended for "yes" and "no," but latterly she has ceased to use even these. She talks quite rapidly on her hands, employing the deaf-and-dumb signs. She is a great reader, enjoys the theatre, can write on the typewriter, and can play a little on the piano. The choreiform movements affect almost the entire body. The muscles of the face, especially the frontalis and masseter muscles, are in constant motion. The tongue is moved continuously from side to side, protruded, retracted, never still a moment. The head is jerked forward, backward, from one side to the other. The shoulders are from time to time elevated and depressed. The arms, hands, legs, and feet do not show as violent movements as do the muscles of the face, but correspond to the movements of an average case of chorea vulgaris.

Upon her attempting to use the hands, or when she walks, the movements are increased in violence. There is no athetoid character observable in the movements. When she walks, which she does with some difficulty, the thighs are adducted, somewhat as in the gait of spastic paraplegia, and the body is inclined forward and backward or from side to side in a somewhat rhythmic manner. The movements cease entirely when she is asleep, and sometimes when she is very deeply interested in reading. The inability to talk seems to be due to the incessant movements of the tongue and muscles about the face. It is impossible to examine her larynx. There is certainly no gross lesion in the cortex, or at least no well-marked evidence of such lesion. No paralysis, anæsthesia, or muscular atrophy. No alteration in the reflexes, superficial or deep, or electrical reaction. Yet there must, of course, be some alteration, or, perhaps, want of proper development in the cortical motor centres.

This latter supposition would seem the most probable since the disturbance of motion is general and began at birth. The only assignable cause is the condition of the mother's nervous system just prior to the birth of the child. The shock of losing a daughter fifteen years old, of an acute disease, in the last month of pregnancy, might be expected to affect the mother's nervous system very profoundly. It will be remembered that in the last month of intra-uterine life the cells of the cortex are only imperfectly developed, and even at birth the greater proportion of fibres from the motor cortex are non-medullated. It is not stretching an hypothesis too far to suppose that the profound nervous shock of the mother might retard the proper development of the cortical cells and connecting fibres in the fœtus. It has been maintained by Hirt, Oppenheimer, and others that fright during pregnancy has produced chorea in the offspring, and it is a well known fact that fright is a very common exciting cause of chorea vulgaris in children. Dale (*Lancet*, vol. i, 1892), in reviewing the causes of chorea, states that something like two thirds of any given number of cases can be traced to fright or other emotional cause. What structural alterations may be produced in the nerve cells by purely emotional causes can never be determined until we discover some method of studying the nature of the cell protoplasm of these highest type cells.

The Metropolitan Medical Society.—At a recent meeting officers for the ensuing year were elected as follows: President, Dr. E. L. Meierhof; vice-president, Dr. M. S. Kakels; recording secretary, Dr. Percy Fridenberg; corresponding secretary, Dr. L. M. Michaelis; treasurer, Dr. J. P. Oberndorfer.

ULCERS OF THE LEG.

By E. A. EDLÉN, M. D.,
MOLINE, ILL.

My intention is not to present any exhaustive research on the ætiology and pathology of ulcers of the leg, but simply to set forth as much as will be necessary to know in order to be able to treat each case successfully.

The first question to be brought up in a case of ulcer of the leg is, Is it a purely local disease, or what constitutional factors exist that would favor such a morbid condition? An ulcer may continue to exist from neglect, local irritation, infection, and by reason of varicose veins. Even if such causes are removed, the ulcer may not heal, on account of a faulty state of the body. Where such a diathesis exists, constitutional treatment is indicated and proper. Any condition that would tend to lower the vital forces, be it syphilis, anæmia, tuberculosis, gout, diabetes, or any of the various diseases that manifest an inclination to retard tissue repair, should be recognized and properly managed, local measures being employed in order to insure success.

What I want to lay special stress on in this paper is the local treatment, which in the majority of instances will be sufficient, provided it is properly executed. Due attention is to be paid to every detail, as some apparently trivial neglect may cause a defeat.

The patient generally comes to the physician with an ulcer in the very worst condition for healing. There is often a dirty greased rag wound around the leg, or the woolen stocking alone serves as a dressing and keeps up the irritation. Very often, also, the quack or cancer doctor has had a chance at it to manifest his superior abilities in (mal)treating an ulcer with his armamentarium of poultice, Spanish fly, and cancer salve.

"Cleanliness is next to godliness," as the old saying is, but in ulcers of the leg it is obligatory. The first step in the right direction, therefore, is a thorough cleansing of the ulcer and the surrounding integument. Should the ulcer be in an unhealthy and indolent condition, the use of soap and water and a good scrubbing with a stiff-bristle handbrush is the proper initiatory procedure. Of course great pain is sometimes caused by such a radical proceeding, and in very sensitive subjects it may be impossible to carry it out effectually without the aid of anæsthesia, but the pain will generally be tolerated if the necessity of the operation is explained to the patient. To bring the ulcer into a healthy state is the chief point in view, and is tantamount to cure, as the subsequent treatment is quite simple. Soft granulations ("proud flesh") should be removed with the curette or may be touched with the solid stick of nitrate of silver. Undermined edges may be pared off, although this is seldom required. But if there is a great deal of induration the edges may be nicked with a curved bistoury in several places. Peroxide of hydrogen is amply efficient to stop the hæmorrhage, and is an excellent agent for a final cleansing of the ulcer.

In ordinary cases it is not necessary to employ such radical means as those above mentioned. The ulcer is wiped clean with absorbent cotton or antiseptic gauze, peroxide of hydrogen in full strength is applied, and the ulcer is then filled with boric acid and covered with borated or carbolized gauze. The boric acid is a very valuable remedial agent in ulcers of the leg. It is antiseptic, and in this case certainly analgetic, as the patient invariably experiences relief, often dearly wished for, from the aggravating itching and sometimes severe pain felt in the ulcer, and an undisturbed sleep the next night is generally the happy result.

Most ulcers of the leg are caused by a depraved state of the local blood supply. The tortuosity of the superficial and sometimes of the deep veins of the leg favors venous stasis and interferes with the nutritive forces of that locality. In order to be able to effect a cure, this condition must be rectified by relieving the veins of their superabundance of blood and by aiding the overdistended venous coats to resume their normal proportions. This is done by bandaging. In order to be effective, the bandage should be carefully applied, so that equal pressure is brought to bear throughout. The bandage should reach from the toes to the knee. The material of the bandage is also of primary importance. A rubber bandage or stocking is difficult to apply correctly, and is irritating on account of the nature of the material, and also by the fact that it shuts out the air and retains the moisture from perspiration, which causes erythema and maceration of the epidermis. The bandage should be elastic, non-irritating, pervious to air, and easy of application. Thin woolen flannel, cut bias, three inches and a half in width and sewed together to the length of five to six yards, makes the ideal bandage. It is elastic, light, and easily applied, does not interfere with the integumentary function, and can be washed when soiled; and another fact, not to be lost sight of, is that it is cheap. After a few experiments the patient himself can generally apply it correctly.

The first dressing should be changed after twenty-four hours. Then the ulcer is again cleaned by mopping it out with gauze and the application of peroxide of hydrogen. If the ulcer is in a healthy condition very little is needed, except cleanliness and proper bandaging, in order to make it heal. But an ointment of which ichthyol is an ingredient generally acts beautifully. The ointment which I have found valuable is composed of:

℞	Ac. carbol.	2 parts;
	Ac. borici	10 "
	Pulv. camph	7·5 "
	Ichthyol	20 "
	Ol. andropog. nardi	q. s.
	Ung. zinci oxidi	q. s. ad 100

M. ft. ungt.

Sig.: Apply once a day.

Of course the proportions may be changed to suit the case.

Ichthyol is stimulating, antiseptic, and promotes healthy granulation. The other ingredients, besides their antiseptic properties, are analgetic and slightly stimulating. After the application the aggravating itching in the ulcer is allayed and the patient is grateful for the change. Sometimes it is advisable to diminish the proportion of ichthyol, especially after the ulcer has begun to heal.

The ulcer should be dressed every day for the first week. It should be cleaned scrupulously, without using any water. If a film has formed over the bottom of the ulcer it should be removed, soft granulations should be touched with the solid stick of nitrate of silver, and the edges given special attention. Twice a week the ulcer may be filled with boric acid, as this will detach any devitalized tissue and kill the various microbes that infest the ulcer.

The patient may be able to attend to the dressing himself after a few instructions, but should also be seen occasionally until the ulcer is healed.

If there is much swelling of the leg, or if there are large varicose veins with sluggish circulation, the patient may be kept in bed, or the leg should be supported on a chair, if the patient is in a sitting posture, in order to facilitate the venous return and diminish the extravasation of serum. In large ulcers, strapping with adhesive plaster is sometimes resorted to, but it has very little to recommend it. Skin grafting is of doubtful value and is seldom indicated.

Under the treatment detailed the large majority of ulcers will heal in from three to four weeks, and any ulcer will close up in from six to seven weeks, no matter of how long standing or what the extent of lesion.

The following cases will serve as illustrations:

Case I.—Mrs. L., aged thirty-five years, married; four children; large, robust woman. Two ulcers on the left and one on the right leg. One ulcer, about three inches in length and an inch and a half in width, was situated on the middle of the external side, and there was a smaller ulcer on the ankle on the same side. The ulcer on the right leg was above the ankle on the internal side. Duration, twelve years. Enormously distended varicose veins on both legs.

She had received treatment off and on for three years, while in Sweden, with insignificant success. A year previous to her coming to me she was treated by a so-called doctor in Moline for a whole year. Poultices and the liberal use of the solid stick of silver nitrate, with Spanish fly on the arm, constituted the routine treatment, with the inevitable result of increase in the extent of lesion and detrimental effect on her constitution.

I instituted the above-described treatment. In two weeks the smallest ulcer was healed, and in six weeks the largest one closed up for the first time in twelve years. Both legs were bandaged and the patient was ordered to continue the bandaging. There has been no return of the ulcer, and the varicose veins have assumed their normal proportions.

Case II.—Mrs. J., sixty years of age, widow; fleshy woman; was troubled with chronic dyspepsia. Hurt herself on the leg three years ago. The wound probably became infected and an ulcer formed. She went to a cancer quack in Moline, who pronounced the ulcer a cancer of the leg, and applied his cancer cure, with the result that the ulcer took on an alarming aspect. She applied to me for treatment. I found the ulcer in a gangrenous condition. The sloughing extended down to the bone, or half an inch deep. I scrubbed the ulcer clean, which caused very little pain, applied peroxide of hydrogen, filled the cavity with boric acid, and bandaged the leg. The next day the slough was loosened and easily removed. The ulcer was again filled with boric acid, and in another day it was found to be in a healthy condition. I prescribed the ointment, which was applied once a day, and instructed the woman how to bandage the leg. In two weeks the ulcer was healed. There has been no return in more than a year.

It is not necessary to record any more cases, as the two stated will be sufficient to demonstrate the validity of the facts I have endeavored to bring into view.

It is my candid opinion that no failures need be recorded in the treatment of ulcers of the leg, as I am convinced that all are curable, provided they receive the proper attention. Whether the line of treatment I have indicated is the best is not for me to say, but, judging from the results in my own cases, I am convinced that it is to be recommended.

ON FEVER AND ITS REDUCTION.

BLEEDING IN SOME CASES OF MENINGITIS.

By LOUISE G. ROBINOVITCH, B. S., B. L. (Paris), M. D.,
BROOKLYN,
LATE RESIDENT PHYSICIAN, PHILADELPHIA HOSPITAL;
LATE RESIDENT PHYSICIAN, NEW YORK CITY INSANE ASYLUM.

In a paper On the Reduction of Fever, etc., in the *New York Medical Journal* for March 19, 1892, I considered the cold-water treatment as a valuable agent in reducing the temperature in typhoid fever and in other febrile diseases.

Dr. Isaac Ott was quoted as saying that fever was due to lack of harmony between the thermogenic, thermotaxic, and thermolytic centres; that it did not necessarily imply either increased heat production or diminished heat dissipation; and that it might manifest itself when both the latter were below the normal.

Dr. Mary Putnam Jacobi's question about the apparently paradoxical effect of cold applications in the reduction of temperature when such applications implied performance of work in and by the nervous system, in itself already overtaxed, was answered by the supposition that the cold applications acted as a sedative on the centres mentioned, through the peripheral nerves; that restoration of harmony between them followed, and pyrexia was reduced without involving the nervous system in the work of new production of heat.

However correct or incorrect the foregoing conjecture may be, a clinical demonstration of the action of cold applications in a case of simple meningitis has been as interesting as it has been exciting.

The patient was two years and eight months old; her family history was good; she contracted measles from her brother. In a few days she was attacked with excessive diarrhœa, and a physician who attended her checked the diarrhœa and told the parents that the child was suffering from typhus fever.

Alarmed at such a diagnosis, the parents called me to see the child on September 18th.

The measles eruption still showed on her face and body. Her general appearance, the signs and symptoms, were too characteristic and typical of cerebral meningitis to have been mistaken for anything else. The projectile vomiting was marked; the pupils were contracted; the face was pale; the muscles of the neck were rigid; the temperature was 103° F.; and at intervals she uttered a loud, piercing shriek. There was intense photophobia, also retraction of the abdomen.

I attended the child four days, and besides the drugs which were given to sustain the heart I used ice to the head,

and the temperature was kept down to 100° F. during the first two days. The general condition of the child, however, was getting worse.

During the first day of my attendance her voice began to fail; on the second day the huskiness increased; and on the third day the voice was completely absent. On the same day her comatose condition became profound, and remained so until after the bleeding.

She did not respond to the pricking of a pin, and the eyelids were closed. She swallowed liquid nourishment, however. On the third and fourth days of my attendance her temperature was 103° F. in the morning and 101° F. in the evening. The face was flushed and pale in turns during the day, but bodily she remained still and in profound coma.

I requested the parents to allow me to leech her locally, but they absolutely refused such permission. Thereupon I decided to leave the case, ordering a cantharides plaster to the back of each ear, as a last resort, although putting little faith in its efficacy in this case. This order was carried out.

The next doctor called by the parents found the child in profound coma. (I give the history of the child during my absence as related by the parents.) The temperature was 101° F. He prescribed some medicines, and ordered the ice off her head.

The child did not improve, and on the 23d of September the parents called another doctor. He prescribed medicines, but ordered no ice to the head. He said that the child would not live over night.

Another doctor followed on the same day, but still no ice was ordered to the child's head. A fourth and a fifth doctor succeeded. Both did nothing of consequence, and the last one prognosticated that the child would die within an hour. This was on September 27th. On September 28th a doctor was called from New York. He found the child in coma, with marked Cheyne-Stokes respirations and irresponsive pupils. She could not swallow even liquids, the *tâches cérébrales* were marked, the pulse was absent, and the temperature was 107·5° F.

This physician wrapped the child's body in wet sheets, and at once applied an ice bag to the head. He ordered the applications to be frequently changed until he should call again, the next day. The parents told him of the treatment I had proposed in the first place, upon which he informed them that had they followed my advice the child could have been saved. They then asked him to do the bleeding, but he refused, saying that the patient was too weak to sustain any loss of blood, and that her recovery was out of the question. He visited again on the 29th of September, and found the child in the same profound coma, but her temperature had come down to 98° F. The parents, encouraged by this improvement, again urged the doctor to bleed her. He did not, however, consider this advisable, as the *tâches cérébrales* were marked, the pulse was absent, and her pupils did not respond to light. He instructed the parents to keep up the cold applications to the head.

On Monday, September 30th, the parents came to ask me to take charge of the case again. I finally consented to do so.

It was noontime when I saw the child. She was greatly emaciated; the coma was profound; she was pulseless; the pupils did not respond to light, and there was a marked corneal abscess on the right side. Cheyne-Stokes respirations were marked; the *tâches cérébrales* were present. She could not swallow liquids, and the throat was choked with mucus. The heels and nates had open sores, and the temperature was 99° F. Her chin and nose were cold, and she looked as if she might die at any moment. But the very profoundness of her coma and the total absence of any signs of irritability or restlessness of the body prompted me to bleed her.

Physicians who have seen many deaths will probably agree with me that when death is impending there is invariably some sort of vital struggle manifested; there is some sort of irregular, apparently incoherent, restlessness of the body and limbs, showing the last struggles, even when the patient is in profound coma. Personally I do not recall one case of death where some such restlessness did not precede it.

The child was bled on both sides of the anterior part of the ear, and half an ounce of blood was drawn from each side. There was the slightest expression of pain on her face during the lancing. Food and medicine were administered artificially. Strychnine and digitalis were given in heavy doses.

During the afternoon she began to show some restlessness. Toward evening the right side of the body was in clonic convulsions and the head was drawn to the right. The Cheyne-Stokes respirations became still more marked. The flush on the face came and went, and the child opened her eyelids for the first time since the setting in of the coma. The pupils did not, however, respond to light. At nine o'clock that evening the convulsive movements of the right side became alarming, and before ten o'clock the body was curving, at intervals of some few minutes, almost to a semicircle, resting on the feet and the occiput. After every one of these seizures, when she fell back exhausted, the right limbs kept on convulsed. The temperature rose to 102·5° F. I expected her to die that night, as the severe exhaustion alone seemed sufficient to cause death.

Toward five o'clock in the morning she calmed down, and rested for about two hours. On Tuesday, October 1st, the convulsions did not reappear, but she was in a bad condition, the Cheyne-Stokes respirations persisting.

The use of the ice cap, with that of digitalis and strychnine in heavy doses, was continued. Her temperature fell to 100° F., and remained at that point during the day. On October 2d she appeared bright, opened her eyes, and seemed to notice things about her; the pupils then responded to a lighted candle. The corneal abscess in the right eye was more extensive, and the conjunctiva of that eye was quite congested. In the afternoon she seemed to fall into coma again, and her temperature ran up to 102° F. On inquiry, it appeared that the father had removed the ice bag and changed her posture from the almost sitting to the recumbent for nearly two hours, thinking to afford her relief. The ice bag was reapplied and kept on, and on October 3d the child's voice returned, there was no mucous accumulation in her throat, and she could swallow liquids. She recognized her mother, and called out "Mamma" for the first time in two weeks. She improved rapidly during the following few days, her voice lost the huskiness, she recognized every one around her, and spoke distinctly as usual, though quite feebly.

On October 5th she appeared worse again, and I have every reason to believe that her mother did not nurse her as scrupulously as I had directed. The child showed again some difficulty in swallowing, and I explained carefully the danger of giving any liquids by the mouth until her swallowing became normal again.

At four o'clock in the afternoon the child asked for a drink. The mother was betrayed into disobeying my orders and gave her a teaspoonful of water. Asphyxia followed instantly.

1015 Putnam Avenue.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. APPLETON & Co.
Edited by FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, MARCH 14, 1896.

THE CORNSTALK DISEASE OF CATTLE.

IN the Bureau of Animal Industry's Bulletin No. 10 Dr. Veranus A. Moore and Dr. E. A. de Schweinitz have rendered a decided service by recording accounts of their studies of the cornstalk disease of cattle, toxæmia maidis. The ætiology of the disease was the chief subject of their investigations, and, though they do not profess to have got to the bottom of it, they have at least cleared away a lot of obstructing rubbish in the shape of theories. The cornstalk disease, it appears, exists only in the United States, and is practically confined to the northern part of the Mississippi Valley. It attacks cattle that are turned into cornfields in the autumn. Its outbreak occurs very soon after the animals have begun to eat the cornstalks, and its course is rapid and almost always fatal. Neither the symptoms nor the lesions seem to be very uniform. Dr. Moore had no opportunity of observing cattle affected with the disease except after their death, so he had to rely on descriptions given by owners. One owner found a steer lying down and unable to rise. Its head was extended, resting on the ground and moving continually from side to side; this was kept up for several hours, and then the steer died. Another owner had found his animals apparently well early in the morning, but two hours later a heifer was found resting squarely upon her knees, the head extended and resting upon the ground. She was frothing at the mouth and groaning as if in great distress, and died in about two hours.

The supposed causes of the disease which Dr. Moore thinks he and Dr. de Schweinitz have shown to be inoperative are the following: 1. Lack of salt and an insufficient supply of water. 2. Feeding the cornstalks without an admixture of other food, such as hay, straw, grain, or pasture grass. 3. Impaction of the omasum due to overfeeding upon the dry cornstalks. 4. The ingestion of corn smut. 5. A species of bacterium which is found in the lesion of a disease of corn known as "corn blight," or the "Burrill disease."

As to lesions, in some cases none were found, but this may have been owing to the fact that some of the organs were so decomposed as to be unfit for examination. Out of twelve cases, lesions of the brain were revealed in four, lesions of the heart in eight, lesions of the liver in eight, lesions of the spleen in seven, lesions of the kidneys in seven, lesions of the fourth stomach in nine, lesions of the duodenum in eight, lesions of the remaining intestines in six, and lesions of the lymphatics in three.

THE PROGRESS OF THE RÖNTGEN PORTRAITURE.

THE picture which we reproduce this week from one made by Dr. Morton is remarkable on more than one account. In the first place, it will be seen that at the centre of the field—what we may call the height of the focus, if such an expression is allowable—the soft parts are not shown at all; the rays have penetrated them completely, as ordinary light passes through the clearest glass. In the next place, in that part of the picture the very bones themselves show only in a nebulous sort of way and at one or two points have practically disappeared. The thick extremities of the phalanges are seen to have resisted the passage of the rays to some extent, and it seems probable that strong currents and a long exposure will be necessary to penetrate massive bony structures. We lately mentioned what seemed to us a curious feature of Röntgen pictures of the hand with a ring on one of the fingers—namely, the continuity of the outline of the soft parts of the finger with the outer circumference of the ring. In Dr. Morton's picture this phenomenon, or its equivalent, is shown more conspicuously than ever; the outline of the phalanx belonging to that internode of the finger which bears the ring actually sweeps perceptibly outward, as if there were at that point an annular exostosis, although it is at the middle of the phalanx, where the bone, but for the ring, would probably have shown thinner than at any other part of its length. We will not speculate on the influence of the metallic ring in causing this deviation of adjacent outlines, but will leave the matter to the physicists, only mentioning it as noteworthy.

That Dr. Morton should have been able to effect such penetration of bone with the aid of little more in the way of apparatus than the usual outfit of a physician who pays special attention to the electrical treatment of disease, in advance, for all we know, of what others having extensive laboratory facilities have been able to accomplish, is indeed notable. It is also encouraging; it should lead other physicians to experiments with such appliances as they may be able to obtain. Now that it has been shown to be perfectly practicable to depict objects that lie hidden under bone, the possibility of the Röntgen portraiture being turned to practical account in diagnosis is changed to certainty, however limited the range of cases may prove to be in which it will be found really necessary. Considering how short a time has elapsed since Professor Röntgen's discovery was made known, it is wonderful what advances have been made in investigating the force revealed by it. We can hardly guess what a week will bring forth.

A PROPOSED PARIS MONUMENT TO PASTEUR.

A NUMBER of distinguished gentlemen of France, representing a Paris committee, have issued a circular in which they invite all who may feel inclined to take part in an international subscription to a fund to erect in Paris a suitable

monument to the memory of the late M. Pasteur. We hope they will meet with complete success in their undertaking, and we are glad to give currency in the United States to the statements made in the circular. It begins with recounting that in Pasteur's native city, in the city where he passed his youth, and in other cities that are the centres of regions which have profited by his discoveries it is proposed to erect a bust or a statue to perpetuate the memory of an illustrious son or to recognize the service he rendered to their local industries.

In addition to these well-deserved testimonials, say the gentlemen who have signed the circular, it has seemed to them that there ought to be a monument to his honor in Paris, erected by means of an international subscription and serving to recall to everybody, Frenchmen and strangers alike, the benefits that have accrued to humanity from his labors. His memory, they justly add, is one that should be celebrated by all nations with one accord, for to him they owe much in the way of fighting and overcoming those common enemies, disease and death.

At the first meeting of the committee, held in December, in the library of the Pasteur Institute, it was unanimously resolved that the Pasteur monument should be placed in a conspicuous locality in Paris. An office for the committee's work in securing subscriptions has been opened, and the committee has power to create local committees in France and elsewhere to obtain subscriptions. A special committee will shortly set about the work of settling upon a design for the monument, choosing the site, and arranging matters with the public authorities. The list of patrons, headed by the president of the French Republic, makes six octavo pages of print. It includes the names of cabinet ministers, senators, members of the chamber, military officers of the highest rank, provincial and municipal officials, academicians, distinguished physicians and surgeons, representatives of great industrial and commercial interests and of renowned scientific bodies, civil engineers, journalists, bankers, artists, teachers, and a cardinal.

The committee that prepared the circular consists of M. J. Bertrand, permanent secretary of the Academy of Sciences (president); M. J. Simon, permanent secretary of the Academy of Moral and Political Sciences (vice-president); M. Grancher, of the Faculty of Medicine (secretary); M. Brouardel, of the Faculty of Medicine; M. A. Christophle, of the *Crédit foncier*, the Count Delaborde, permanent secretary of the Academy of the Fine Arts; M. Duclaux, of the Pasteur Institute; M. Magnin, of the Bank of France; Baron A. De Rothschild; M. Roux, of the Pasteur Institute; and M. Wallon, permanent secretary of the Academy of Inscriptions and Belles-lettres. Such a committee ought to find no difficulty in carrying out its laudable purposes. It is to be hoped that Americans will contribute largely to the fund required. It is at all times esteemed a privilege by Americans to take part in honoring worth and greatness, whether in a countryman of their own or in a fellow-cosmopolitan; it is particularly fitting in this instance since the memory of our own Franklin has lately been conspicuously celebrated at Passy.

MINOR PARAGRAPHS.

"STIRRUPICULTURE."

The first number of a medical journal entitled the *Medical Council* has made its appearance in Philadelphia. It is a monthly edited and published by Dr. J. J. Taylor. Among the subjects to which it professes to give special attention is stirpiculture, which a humorous contributor, Dr. Louis Lewis, turns into "stirrupiculture," and under that heading furnishes the following lines:

"A horse 'race' resembles the great 'race' of man,
"Tho' the simile's force is diminished,
"For the man's 'race' is naught but a 'cell' at the start,
"While the other's a 'sell' at the finish.
"Moreover, in case of the 'race' of the horse,
"It's 'over' as soon as he wins it,
"Whereas in the case of the 'race' of the man,
"It's 'ova' before he begins it.
"Then let us be cautious, and wisely remember,
"While patiently waiting the issue,
"That horse 'sells' are naught but a tissue of lies,
"And man 'cells' allies of a tissue."

A NEW RUSSIAN JOURNAL.

A new bi-monthly journal of surgery is announced. The prospectus, which is printed in French, gives its title as *Annales de chirurgie russe*, but it is stated that the journal itself will be printed in the Russian language. It is to be edited under the direction of Professor Sklifossowsky and Professor Weliaminoff, and published in St. Petersburg.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending March 10, 1896:

DISEASES.	Week ending Mar. 3.		Week ending Mar. 10.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	4	5	10	2
Scarlet fever	130	18	127	11
Cerebro-spinal meningitis	2	1	0	0
Measles	523	24	481	24
Diphtheria	254	56	214	39
Small-pox	0	0	0	0
Tuberculosis	143	106	100	108

The New York City Board of Health Regulations regarding the Isolation of Cases of Diphtheria in Private Houses.—The board has issued the following:

"In private houses the duration of isolation of cases of diphtheria after apparent complete convalescence of such cases shall be determined by the physician in attendance, with the following conditions:

"First. Children convalescent from diphtheria shall not be allowed under any conditions to attend any kind of school—*i. e.*, day school, Sunday school, dancing school, etc.—until cultures show the absence of diphtheria bacilli in the throat.

"Second. Circulars of information regarding the persistence of virulent diphtheria bacilli in the throats of convales-

cent cases of diphtheria and the dangers from infection arising from such cases shall be furnished by the health department and presented by the attending physician (if the patient is a child) to the mother, father, or guardian, or, if the patient is an adult, to the patient, and the meaning of the circular and the significance of its contents explained to them.

"Third. The attending physician, when continued isolation is not maintained, shall immediately notify, in writing, the chief inspector of contagious diseases, of the health department, of his action, and disinfection of the premises may then be performed by the health department.

"Exceptions to this rule regarding the time of isolation of convalescent cases of diphtheria in private houses shall be

"1. Teachers of all kinds.

"2. Persons whose occupations bring them into immediate contact with children.

"The regulations of the health department regarding isolation of cases of diphtheria in boarding houses, apartment houses, hotels, and tenement houses heretofore observed shall be continued."

The board has also issued the following "*circular of information regarding the danger of cases of diphtheria communicating the disease to others after convalescence:*

"Diphtheria is due to a germ known as the diphtheria bacillus. This germ is present in the membrane and in the secretions of the mouth, nose, and throat of cases of diphtheria. The disease is only produced by the reception of these germs into the mouth or air-passages of other persons. The discharges from the nose and throat of cases of diphtheria containing these germs may be received on handkerchiefs, towels, bedclothing, carpets, rugs, personal clothing, toys, books, etc., dry, become pulverized, and breathed in as dust, or they may be transmitted directly from the sick to the well through personal contact, as in the use of drinking cups or eating utensils which have been employed by the sick, or through kissing the sick, or through the direct discharge of the secretions on the hands or face or clothing of the nurse or physician in attendance, in making applications to the nose or throat of the sick person. Thus in numerous ways the germs find their way from the throat of the sick to the mouth or air-passages of the well, and if then the conditions are favorable for the development of diphtheria in the throat of the person receiving them, after a varying period the disease is produced. Diphtheria only follows the reception of the germs in the throat if favorable conditions for their growth exist there. In many cases the germs remain for many days and increase in number in the throats of healthy persons who have been in contact with cases of diphtheria without producing the disease. Well persons who have these germs in their throats may convey them to others, who contract the disease while they themselves escape.

"During convalescence from diphtheria the germs of this disease often persist in the throat for many days after all signs of disease in the throat have disappeared, and after the individual is entirely well. Investigations show that in about thirty per cent. of cases they persist for three weeks or longer after the beginning of the disease; in fifteen per cent. for four weeks or longer; in five per cent. for five weeks, and occasionally even for a much longer time. Experiments have shown that almost invariably these germs are virulent and capable of inducing the disease in others, so long as they persist in the throat, and persons having such germs in their throats may convey the disease to well persons at any time. Observation, however, has proved that the chances of communication of the disease to well persons after complete convalescence are not great, excepting among children, who are far more susceptible to the disease and who are much more likely to become infected through the frequent introduction of articles into the mouth. The danger of communicating the disease to others after recovery is less than during the disease, because the number of germs is smaller and because the secretions are less abundant and not likely to be discharged so that they would be received by other persons. Where persons do not remain completely isolated, as they are strongly advised to do, until cultures made from the throat show the absence of the diphtheria bacilli, they should constantly remember the facts set forth in this circular and use every precaution to prevent the communication of the disease to other persons, and should be particularly careful in their relation and contact with children.

"Under no conditions will children whose throat secretions still show the presence of diphtheria bacilli be allowed to attend school of any kind, and under no conditions will adults be allowed to return to their occupation, where this involves immediate contact with children."

Medical Inspector Kershner, of the Navy.—In a letter to the editor of the *Sun*, Mr. Horace B. Fry says:

"I presume every fair-minded man who heard or who read the evidence must have wondered how such a verdict was reached on such evidence. The explanation is this: Where a quarrel between 'line' and 'staff' finds its way into a court martial the findings of the court are always adverse to the 'staff,' because this old expedient of a court martial (absurd in time of peace and in cities where United States courts are open) is always composed with a majority of line officers; hence a staff officer can not get a fair trial, if even the line officers know anything about law.

"Any one who examines the findings of the average court martial where the man tried is a line officer will be amazed at the light sentence he gets, while a staff officer receives no mercy.

"Those who took the trouble to study the quarrel impartially approve of Dr. Kershner's acts.

"When a medical inspector is responsible for the health of five hundred men on his own ship, in fever-laden waters, he does well to take no chances of doctoring a merchantman nearer the shore than himself and quite able to send ashore for a resident doctor. This is the whole story. No doubt the President has heard the other than the Navy Department view, and, having read the evidence, is acting judicially as well as judiciously.

"The whole medical profession applauds the conduct of Dr. Kershner. The health of the fleet, the extraordinary exemption of twelve hundred men from disease and death during a two years' cruise in yellow-fever ports, where and when the fleets of every other nation were losing largely by yellow fever, is the best reply to clannish objections to Dr. Kershner's methods or to martinetish resentment of imagined insubordination."

The Late Dr. Hiram Corson.—In Dr. Corson's death, at his home in Pennsylvania, the medical profession loses an unusually aged member and a man of exceptional wisdom. His career had been long and most useful. He was revered by those of his colleagues who had the privilege of knowing him personally, and not by them only, but by many who had read his occasional contributions to medical literature.

The German Medical Society of the City of New York.—The announcements for the last meeting, on Monday evening, March 2d, were of exhibitions of patients, a discussion on specimens of actinomycosis, and the following papers: Prac-

tical Observations on Diseases of the Accessory Cavities of the Nose, by Dr. J. W. Gleitsmann; and The Diagnosis between Benign Lymphomyxoma and Malignant Lymphomyeloma, by Dr. J. A. Beuermann.

The New York Hospital Training School for Nurses.—The graduating class will hold a reception on Monday evening, the 16th inst.

The Medical Department of the University of Buffalo.—The dean informs us that the school is to have a four-year course, to begin with the session of 1896–'97.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending February 29, 1896:*

Rosenbleuth, J. C., Assistant Surgeon. Detached from the Naval Laboratory and ordered to the U. S. Steamer Raleigh.

Shipp, E. M., Assistant Surgeon. Detached from the U. S. Steamer Raleigh and ordered to the U. S. Steamer Vermont.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the Ten Days ending February 29, 1896:*

Vaughan, G. T., Passed Assistant Surgeon. Leave of absence for seven days granted February 17, 1896, revoked February 27, 1896.

Guiteras, G. M., Passed Assistant Surgeon. Directed to proceed on March 25, 1896, from Gulf Quarantine Station to Key West, Fla., and assume command of service. February 27, 1896.

Smith, A. C., Passed Assistant Surgeon. To proceed from Memphis, Tenn., to Gulf Quarantine for duty. February 25, 1896.

Young, G. B., Passed Assistant Surgeon. When relieved at Key West, Fla., to proceed to Memphis, Tenn., and assume command of service. February 27, 1896.

Wickes, H. W., Assistant Surgeon. To assume temporary command of service at Memphis, Tenn. Upon being relieved, to rejoin station at New Orleans. February 24, 1896.

Society Meetings for the Coming Week:

Monday, *March 16th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Hartford, Conn., Medical Society; Chicago Medical Society; Cleveland Society of the Medical Sciences.

Tuesday, *March 17th:* New York Academy of Medicine (Section in General Medicine); New York Obstetrical Society (private); Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Society of the County of Kings, N. Y.; Baltimore Academy of Medicine.

Wednesday, *March 18th:* Medico-legal Society, New York; Northwestern Medical and Surgical Society of New York (private); Medical Society of the County of Allegany, N. Y. (quarterly); New Jersey Academy of Medicine (Newark).

Thursday, *March 19th:* New York Academy of Medicine; Brooklyn Surgical Society; New Bedford, Mass., Society for Medical Improvement (private).

Friday, *March 20th:* New York Academy of Medicine (Section in Orthopædic Surgery); Brooklyn Medical Society; Baltimore Clinical Society; Chicago Gynæcological Society.

Saturday, *March 21st:* Clinical Society of the New York Post-graduate Medical School and Hospital.

Answers to Correspondents:

No. 441.—We do not feel certain that Röntgen pictures can not be made with such an outfit as you describe, but we think it improbable. Read Dr. Morton's article in this number of the *Journal.* Just at present it is difficult if not impossible to obtain Crookes's tubes in New York.

Births, Marriages, and Deaths

Married.

Meade—Magner.—In Buffalo, N. Y., on Tuesday, March 3d, Dr. Henry Bruce Meade and Miss Bertha Pauline Magner.

Died.

Anderson.—In Starrsville, Ga., on Monday, March 2d, Dr. J. C. Anderson.

Comegys.—In Cincinnati, on Monday, February 10th, Dr. C. G. Comegys, in the eightieth year of his age.

Corson.—In Plymouth Meeting, Pa., on Wednesday, March 4th, Dr. Hiram Corson, aged ninety-two years.

Day.—In St. Paul, Minn., on Sunday, March 8th, Dr. David Day, aged seventy-one years.

Elliot.—In New York, on Friday, February 28th, Dr. James Woodward Elliot, aged seventy-two years.

Ely.—In Newburgh, N. Y., on Friday, February 28th, Dr. Smith Ely, aged sixty-eight years.

Fanning.—In Catskill, N. Y., on Friday, February 28th, Dr. Nelson Fanning, aged eighty-eight years.

Harris.—In Atlanta, Ga., on Friday, March 6th, Dr. Nathan O. Harris.

McFarlane.—In Toronto, Ont., on Saturday, February 29th, Dr. Laughton McFarlane, aged fifty-four years.

Townsend.—In Washington, D. C., on Tuesday, February 25th, Dr. Smith Townsend.

Letters to the Editor

SEVERE MALARIAL FEVER.

Knoxville, Tenn., *February 10, 1896.*

To the Editor of the New York Medical Journal:

Sir: Permit me to call your attention to the following case: W. H., a white man, twenty-seven years old, married, and for six years a resident of Knoxville, is a conductor on an electric railroad. His health has been reasonably good for the last six years. Previous to that he lived in Missouri and had "chills and fever" at different intervals during childhood.

I was consulted on January 26, 1896, when the symptoms were those of digestive disturbance, but at 12 P. M. the patient had a slight chill, and five grains of quinine sulphate were given every four hours. At 12 P. M. the next night another slight chill occurred, and the quinine was continued. I was called again at 3 A. M. on the morning of the 29th, and found the patient in a paroxysm of one of the hardest shaking chills I have ever seen. This was the fourth paroxysm of the same chill, which had lasted since 11 P. M. While the patient was complaining of "freezing to death," the thermometer in the axilla revealed a temperature of 108·6° F. I then gave hypodermically a quarter of a grain each of morphine and pilocar-

pine hydrochloride; in a few minutes the chill ceased and the patient was bathed in a most profuse sweat, yet the temperature remained above 108° for several hours (verified by Dr. McCallie, of this city), and the patient literally steamed during that time.

Ice water was used freely, both internally and externally. When the fever began to decline, wild, maniacal delirium set in, which lasted for several days, and could be quieted only with large doses of morphine

Sixty grains of quinine sulphate were given every twenty-four hours for about three days, and since then fifteen grains a day have been given, and there has been no return of the chills, except a slight symptom on the ninth evening. The patient is now almost entirely well and will resume his occupation in a few days.

The only evidence remaining of the severe congestion that he suffered is a slightly dilated pupil. The cyanosed condition of the face has entirely disappeared, and I regard his recovery as complete. H. J. Kelso, M. D.

Proceedings of Societies.

SOCIETY OF THE ALUMNI OF THE CITY HOSPITAL.

Meeting of February 5, 1896.

The President, Dr. R. C. Newton, of Montclair, N. J., in the Chair.

Pleurisy, its Ætiology and Pathology.—Dr. W. L. Stowell opened a discussion on pleurisy with a paper on the ætiology and pathology. As in other serous membranes, he said, the process of inflammation began with excessive flow of blood to the surface; the capillaries were distended, freedom of the circulation was impeded, and the surface became dry, red, and hot from lack of normal secretions. After a few hours the walls of the capillaries yielded to pressure, and serum and leucocytes passed through into the serous cavity. The fibrinogen, latent in the plasma, united with the white cells, and fibrin was formed which covered the pleural surfaces in flocculent or firm masses.

Pleurisy had often been attributed to cold, but recent observers, especially those working in bacteriology, had found a more definite cause. Pleurisy occurred frequently in children, especially as a complication of pneumonia, scarlet fever, rheumatism, typhoid fever, or small-pox. The author had not seen it as a complication of the last two diseases. Young adults were not very prone to it, but might have it in croupous or catarrhal pneumonia. Most cases occurred in middle life, more frequently as a complication of some acute or chronic general disease, such as infectious processes, rheumatism, gout, purpura, or tuberculosis, less frequently as a primary disease.

The amount of fluid effused and the proportion of the different ingredients varied. If fibrin formed on both layers the breathing became labored and painful, and pockets might be formed, constituting local empyema. Heavy fibrinous masses with little fluid left permanent thickening of the pleura, impairment of the lung, and usually retraction of the chest. New connective-tissue cells might form permanent adhesions.

Laboratory research during the last five years had shown pleurisy to be due usually to infection. The author related a case of pleurisy quickly following pneumonia in which the bacteriologist had reported that in the fluid there was a pure culture of *Diplococcus pneumoniæ*. There were now records of many such cases, and Koplik had stated that from fifty-three to sixty per cent. of purulent pleurisies in children were cases of metapneumonic infection; in adults, 17·3 per cent. Netter had found 68·5 per cent. of pleurisies in adults to be tuberculous. Ehrlich based his diagnosis of tuberculous empyema on finding the tubercle bacillus in the fluid, although failure to find it was not proof of non-tuberculous infection. We remarked the frequency of pleuritic adhesions which accompanied the phthisis cases that came to autopsy. Few had a history of marked pleurisy with effusion. The exudate was chiefly plastic, and seemed to proceed from underlying inflammation. It was the pleural element which caused some phthisis patients so much pain.

Traumatic pleurisy was simple, the exudate was not great or widespread, and pus rarely occurred unless there was infection from without. Cancer was an occasional cause of pleurisy. Pleurisy from influenza infection was simple as a rule, and the effusion slight. Variolous infection was far more serious, and the effusion was usually purulent.

The Symptoms, Treatment, and Sequelæ of Pleurisy.—Dr. Frank W. Merriam read a paper on these subjects. There were three kinds of pleurisy—the acute, with little or no effusion except fibrin; the subacute, with abundant effusion; and the chronic, or empyema, when the effusion was purulent. The first symptom of acute pleurisy was pain, usually below the nipple on the affected side, but it might be much lower and mislead one to diagnosticate localized peritonitis or some other trouble. The breathing was quick, jerky, and irregular. As the physical signs might be slight at the beginning, the case might be mistaken for one of intercostal neuralgia or one of pleurodynia.

The appearance of friction sounds would establish the diagnosis, unless they were mistaken for the râles of pneumonia. On the occurrence of effusion there came characteristic objective signs familiar to all physicians, yet he knew of no disease so easily overlooked by one who should know better as pleurisy with effusion or hydrothorax, especially if in his haste he should fail to make a physical examination. Subacute pleurisy might be confounded with enlargement of the liver, gangrene of the lung, empyema, hydrothorax, phthisis, and cancer of the lung. In subacute pleurisy there was little or no acute pain; there were shortness of breath and feeling of weight on the affected side; fever might or might not be present. Measuring and comparing the appearances of the two sides of the chest he thought of little importance, for few people gave the same measurements for the two sides. The indentations between the ribs might be effaced, and in some cases there was bulging, oftenest in children. In empyema, while the physical signs were the same, we expected more constitutional disturbance. The hypodermic needle would decide whether the effusion was serum or pus. A grooved needle should be employed, and if pus was found a bistoury could be slipped along the groove, making an opening for drainage at once.

In the treatment of acute pleurisy, iodide of potassium had been given on account of its supposed power to cause absorption. If the effusion was sufficient to cause dyspnœa, we should aspirate. Drastic cathartics and sweating were not advisable. Dieulafoy's aspirator or one similar should be used, for the trochar and cannula had often led to empyema. After withdrawing considerable fluid we should stop if the patient complained of pain or weakness. Sunlight fresh air, and proper food were indicated.

In empyema drainage was required, and might be accomplished by means of a tube passed in through one incision and

out through another, both ends projecting, or by a long tube introduced through a single opening, a part to be withdrawn and cut off each day. The author had left a tube in place for about twenty-two days. The danger of a permanent opening was the objection to leaving it in too long. Many patients did well without any injections. He would not use carbolic acid or bichloride of mercury. Dr. Cabot's method of drainage in children, and some others, were referred to.

Referring to sequelæ, the author said pleurisy always damaged the membrane somewhat, and the more or less thickened pleura, with its adhesions, reminded the patient by twinges of pain of his former trouble. Deep breathing and exercise were recommended by some to break up the adhesions and allow of more motion of the chest wall. Atelectasis from too long compression of the lung; emphysema from too rapid removal of the effusion; displacement of the heart; a weakened chest and constitution favoring tuberculosis, etc., were among the sequelæ. If we knew more about the function of the pleura we could understand better the effects of disease of that membrane.

Dr. A. Rupp said that when he had been in the hospital he had aspirated in all cases of pleuritic effusion that had come under his care. One man he had aspirated six times without apparently relieving the diseased condition of the pleura. When we took such cases into account we could not flatter ourselves by saying that aspiration cured pleurisy. Aspiration was only a mechanical remedy which relieved a mechanical condition, and was not *per se* a cure; and the effusion was not *per se* the disease. Wunderlich was quoted as relating the case of a man who had an effusion in the chest which resisted all therapeutical efforts. This man finally fell into the hands of one who bled him freely; and Wunderlich had been very much surprised to see this patient in good health a year after he had given him up as incurable. Pleurisy, said the speaker, was an important disease, both on its own account and because it was a complication of many other important diseases. He spoke of a case he had seen while in the City Hospital which had puzzled most of the physicians who had examined the patient. What seemed to puzzle them all had been the confusion of sounds produced by the condition of affairs in the thorax. This poor man had albuminuria and general dropsy. The respiratory sounds positively were irregularly diffused and different in character, and in front the lung could only be heard as being compressed in the clavicular region. The rest of the anterior portion of the chest was filled up with an immense aortic aneurysm and a distended pericardium from pericarditis. The speaker stated that he did not meet with empyema much in private practice, and did not find it necessary to aspirate often. He spoke of a case of measles in a child not two years old who had pleurisy, with effusion pressing the lung up to the clavicular region, without any preceding pneumonia. This fluid had cleared away within ten days.

Dr. Carr thought that cases which appeared to be due entirely to cold or exposure could often be attributed to a slight pneumonia, bronchial catarrh, or measles. As to the changes in the appearance of the chest in children, he disagreed with Dr. Merriam as to its being more apt to bulge than the chest of an adult. Children's chests were not naturally so strong. The structures were less resistant. The chest was sometimes apparently enlarged, and really so when there was a great deal of effusion. He thought there was no danger in the aspirating needle for exploration if proper antiseptic precautions were taken. Often the application of a tight bandage would give relief. He thought the washing out of the cavity was to be deprecated unless there was some evidence of the presence of fœtid pus or of large flocculi. He spoke of a patient that had been operated upon five years ago, when there had been no evidence of tuberculous disease, but who now showed the tubercle bacilli.

Dr. Proben said, in reference to pleuritic adhesions, that in acute pleurisy one was always in doubt as to whether the patient might not go into a tuberculous condition. He spoke of Dr. Hance, who, when patients came to him with a hawking or spitting from the throat, examined the lungs for pleuritic adhesions, and could often tell by the character of the cough whether the adhesions were low down or high up. This symptom always called for an examination of the sputum for evidence of tubercle bacilli. He also advocated strapping the chest for acute pleurisy. Empyema in children should be treated by incision and drainage; resection of a rib and irrigation of the cavity were as a rule not necessary. He spoke of a recent case of his where he had washed out the chest repeatedly, and said that after each washing the temperature had fallen several degrees. Among as many as twelve patients that had been operated upon by him about five years ago, none who were now living showed any evidence of tuberculous disease, but two had died of subsequent tuberculosis.

Dr. A. T. Muzzy spoke of a friend of his who had empyema. He had gone to the Adirondacks to recuperate from typhoid fever when the pleurisy started. He was aspirated, the pleura was washed out, and the cavity had seemed to heal up. After two or three weeks there was a sudden rise in temperature and another gush of matter took place, revealing a large second cavity.

Dr. J. H. Eden said that it made every difference which end of the knife one was at. He spoke of an attack of pleurisy that he had had which had come on very suddenly. He had been treated by Dr. Leaming, who had dosed him with calomel and chloride of ammonium in large doses. There had not been much effusion, but pleural adhesions had formed that had not disappeared for six months. He had taken an eighth of a grain of calomel every six hours.

Dr. Rupp said that Dr. Leaming had published about twenty years ago a paper on the abortive treatment of acute pleurisy with thirty-grain doses of calomel, but trial of the treatment at Charity Hospital had proved negative. The speaker also referred to sudden deaths during pleurisy, and related the case of an elderly man who while convalescing had suddenly died. The death had been syncopal. In regard to the bulging of children's chests, he had frequently seen the affected side bulge and not the unaffected one, and such had been the case with the patient suffering from measles pleurisy, before mentioned.

The President spoke of treating pleurisy with large doses of iron, and believed iron to be a most valuable remedy in many cases. Among the sequelæ of pleurisy which had not been mentioned was curvature of the spine. He spoke of Dr. Leaming's plan of using small doses of calomel to cause absorption of the adhesions left by pleurisy. He instanced a case in which this treatment had not seemed to avail much, but he felt that it might do good if persisted in long enough.

Dr. Stowell said that he always carefully measured the chest and did not trust to its appearance alone. He thought the chest walls of children were very mobile, and he had often found the sound side of the chest bulging. As to the symptoms, the presence of fever or pain or the lack of respiratory murmur over a large area was not diagnostic of the variety of exudate. In aspirating, with proper cleanliness, no harm could be done. In the first cases in which he had operated he had washed the cavity with carbolic-acid solution,

out of late he had discontinued this washing entirely. His onic treatment for children was with a mixture of syrup of odide of iron with hypophosphites and glycerin, which he called elixir vitæ. He believed external applications of odine, olive oil, and croton oil, and oleate of mercury, pro-noted absorption.

Cirrhosis of the Liver.—Dr. Proben presented a woman, forty-six years of age, who had had eleven children, the last child four years before. Six years ago she had had a miscarriage and an eruption had appeared on her body, followed six months later by ulcers on the lower third of the leg, and two years ago a nodule had shown itself on her nose, which had broken down and left a depressed scar. The cirrhosis of the liver had been perceptible distinctly months ago, but on examination at the present time it was not so marked. Six months ago the nodules of the liver had been easy to detect by palpation. From the history the patient had given, and from the disappearance of the nodules under antisyphilitic treatment, the speaker thought the disease had been syphilitic.

Dr. Rupp asked if there had been any œdema of the legs or abdomen at the time the liver was large enough for one to feel the hobnail protuberances, and was told there had not been.

Dr. Carr thought the liver was the same as the ordinary typical liver of syphilitic patients. The patient seemed to be well nourished and in good health, and this would be a good reason for the continuance of the treatment.

The President said it was a good thing to see a case that had so promptly responded to treatment. He asked Dr. Proben about a case he had presented to the society a few months before, one of enlarged liver.

Dr. Proben said he had treated the patient with quinine and Fowler's solution without any improvement; subsequently he had prescribed a tablet of mercury and chalk to be taken three times a day, and in five or six weeks the size of the tumor had been somewhat diminished. General treatment with fats had not proved of any value; bone marrow had been tried and had seemed to do harm rather than good. It had been of no use at all.

Book Notices.

A Text-book on Nervous Diseases. By American Authors. Edited by Francis X. Dercum, A. M., M. D., Ph. D., Clinical Professor of Nervous Diseases in the Jefferson Medical College of Philadelphia, etc. With 341 Engravings and 7 Colored Plates. Philadelphia: Lea Brothers & Co., 1895. Pp. xiii–17 to 1056. [Price, $6.]

The importance of this contribution to American medical literature may be appreciated on inspection of the list of contributors, men recognized as authorities on the subjects of which they write. Aside from this fact, what they have written is good and modern, and though the book has those features which are inherent in a "system"—namely, repetition and differences of opinion as to terms and explanations of phenomena—it will certainly take and hold its place among the standard works on nervous diseases, in this country at least.

The book is well printed and is furnished with excellent illustrations, many of them original. The editor has evidently interested himself deeply in each subject, for he has supplied illustrations for many of the articles written by others. Considering the size of the book, the proof-reading has been good; but some foreign references are fearfully mutilated in type, and several proper names are misspelled.

To review the entire work in detail would require too much space. Chapter I is devoted to general considerations and to the examination of the eye from the standpoint of the neurologist. Chapter II is the article on neurasthenia, and is exceedingly well written. The diagnosis between neurasthenia and hypochondriasis is clearly drawn. The entire subject is admirably covered. The chapter on hysteria coincides with the author's previous writings. We can not agree with the author in his "racial" classification of hysteria as outlined on page 97. Nervous affections following railway and allied injuries are discussed in the succeeding chapter, and diathetic and toxic affections follow. These chapters are comprehensive and include the latest teachings. The article on infectious diseases, though deserving of the highest praise for its lucidity and technical correctness, is almost a reprint from the author's book. The chapter on choreiform affections is classical and complete. The author favors the infectious theory of chorea.

Local spasms is the title of a short article, and this is followed successively by articles on functional tremors, on paralysis agitans, and on epilepsy. The operative treatment of epileptoid diseases is fully considered, with rather discouraging conclusions.

One of the best chapters in the book is the one on arrested development and malformations. It is not too much to say that it is one of the best treatises on the subject in the English language. It is strictly scientific and the subject is anatomically arranged. Exception must be taken, however, to the author's statement (page 315) that maternal impressions may be an ætiological factor in the production of malformations. This is a disputed point and should not be given *ex cathedra* as a positive statement.

An article on the diseases of the membranes, sinuses, and brain tissue concludes the consideration of general diseases of the brain, and it is an admirable one.

The anatomy of the cerebral cortex and the localization of its functions are given in Chapter XIV, which is carefully written and gives prominence to the author's views. Focal diseases of the brain occupy the succeeding three chapters, the best of which is the one on tumors. Three chapters are devoted to the consideration of diseases of the spinal cord. The following subjects are disposed of in successive chapters: Bulbar palsy, multiple cerebro-spinal sclerosis, paretic dementia, syphilis of the nervous system, diseases of the nerves, diseases of the cranial nerves, diseases of the spinal nerves and their plexuses, diseases of the muscles, the tropho-neuroses—in an exhaustive and scientific article—and trophic diseases associated with pathological changes in the thyreoid gland. Symptomatic disorders are considered in one chapter, another excellent one embraces the surgery of the brain, the spinal cord, and the nerves, and the work is concluded by an article on neuro-electrotherapeutics. It will be seen that a well-arranged plan has been systematically followed to good advantage. It is to be regretted that a more exhaustive review —which the work deserves—can not at this time be given.

The contributors who have helped the editor to make a reliable text-book for the student and the physician are Dr. N. E. Brill, Dr. Charles W. Burr, Dr. Joseph Collins, Dr. Charles L. Dana, Dr. E. D. Fisher, Dr. Landon Carter Gray, Dr. C. A. Herter, Dr. George W. Jacoby, Dr. W. W. Keen, Dr. Philip Coombs Knapp, Dr. James Hendrie Lloyd, Dr. Charles K. Mills, Dr. S. Weir Mitchell, Dr. Charles A. Oliver, Dr. William Osler, Dr. Frederick Peterson, Dr. Morton Prince,

Dr. G. E. de Schweinitz, Dr. Wharton Sinkler, Dr. M. Allen Starr, and Dr. James C. Wilson.

A Treatise on Nervous and Mental Diseases, for Students and Practitioners of Medicine. By Landon Carter Gray, A. M., M. D., Professor of Nervous and Mental Diseases in the New York Polyclinic; Visiting Physician to St. Mary's Hospital, etc. Second Edition, revised and enlarged. With One Hundred and Seventy-two Illustrations and Three Colored Plates. Philadelphia: Lea Brothers & Co., 1895. Pp. xi–733. [Price, $4.75.]

It is pleasant to see a book which deserves so well the approbation of the medical profession reappear with signs of careful revision and of an effort to keep pace with the rapid progress of the past three years. Our ideas of the histology of the nervous system have been transformed by the researches of Golgi and Cajal, and, although the application of these discoveries to disease has not yet been extensive, it is most important for the student to have the facts in mind that he may be prepared for the developments of the future.

The author has given briefly but clearly the results of the new methods of examination, has rewritten the chapter on the anatomy of the nervous system, and has added a number of illustrations which are quite up to the high standard of the first edition. There are five new chapters—on dementia; dementia paranoides; confusional insanity; delirium, and massage. A chapter on hydrotherapy would have been as interesting as that on massage and, if we may judge from its frequent use in France and Germany, we have something to learn before relegating it to the hands of Kneipp. It is to be regretted that the bibliography has been omitted; there are many who will see the book for the first time in this edition and will not have access to the first or opportunity to consult the journals, and who will thus miss the introduction to many an authority. The bibliography is a very important feature in every book not intended merely for elementary instruction, and the more complete it is the more valuable does the book become in the library as a milestone of progress.

In a book of this size an exhaustive treatment of nervous and mental diseases would be impossible; the author, however, has the faculty of writing tersely and to the point, and few words are wasted in the discussion of theories of no practical value. But it must be said that the distribution of space is at times unfair to the familiar forms of disease; for instance, hydrocephalus receives two pages and a half, while Huntington's chorea has nine; Ménière's disease has six, and exophthalmic goitre but two. This may, on the other hand, be considered a virtue, as these familiar diseases are treated of at length in every text-book of general medicine. The careful attention given to treatment is admirable and is in sympathy with our views of the place the physician holds in the community. Optimism, if an error, is on the right side.

Epidemic Ophthalmia. Its Symptoms, Diagnosis, and Management, with Papers upon Allied Subjects. By Sydney Stephenson, M. B., F. R. C. S. Ed., Surgeon to the Opthalmic School, Hanwell, W. Edinburgh and London: Young J. Pentland. New York: Macmillan & Co., 1896. Pp. viii–278. [Price, $3.]

This is an elaborate scientific and practical treatise on a subject of wide economic and social interests. It is divided into four sections. The first treats of epidemic ophthalmia, its symptoms, diagnosis, and management. The second consists mainly of a clinical inquiry into the prevalence and significance of the follicular granulation of the conjunctiva. The third is devoted to the treatment of trachoma and its complications, and the fourth to the treatment of follicular conjunctivitis. An appendix contains an illustrated description of the various kinds of lavatories which are or should be found in all schools or other institutions where children are congregated in numbers, and of the articles for washing purposes used therein. There is a good index of subjects and authors, also a list of the works consulted.

In the first section, on epidemic ophthalmia, after giving an account of the great prevalence of the disease throughout the schools of the United Kingdom, the author reflects very severely, though justly, on the carelessness of the school authorities, saying that "guardians who permit ophthalmia to exist in parochial schools are simply manufacturing taxpayers' burdens out of children who, under proper conditions, should become self-supporting and productive members of the community. The money that should have been spent in preventing ophthalmia is paid many times over in supporting the victims of an evaded responsibility." He divides his subject into: 1. Muco-purulent or catarrhal ophthalmia. 2. Purulent ophthalmia. 3. Diphtheritic ophthalmia. 4. Acute trachoma. In all these he maintains that all secretions from an inflamed eye should be examined for diagnostic purposes in every case. He believes that there is but one form of purulent ophthalmia, although its clinical manifestations and its severity may vary. He contends that the secretion always contains the gonococcus, whether it comes from ophthalmia neonatorum or from gonorrhœal ophthalmia, and he considers the diseases essentially the same, their clinical differences being chiefly due to differences in the anatomical structure of the parts affected. He quotes Widmark's opinion that in adults there is a subepithelial layer of adenoid tissue not found in children, for which the gonococci have a special predilection, and that hence in adults the micro-organisms penetrate deeply and are difficult to attack with remedies. To these views exception will be taken by not a few readers. In diphtheritic ophthalmia, the author considers the diagnostic feature to consist of one or more depressed patches of a grayish-white, firmly adherent membrane. True diphtheria of the conjunctiva may be distinguished from all spurious forms by the presence of the Klebs-Löffler bacillus; by the tenseness and rigidity of the lids; by the fact that the exudation can not be wiped away without great difficulty; by the cornea being generally affected; by the fact that it involves an actual destruction of tissue and subsequent formation of scars in the conjunctiva; by the swelling of the pre-auricular glands; and by the marked constitutional symptoms. While the author holds that the gonococcus and the Klebs-Löffler bacillus are the specific causes respectively of purulent and diphtheritic ophthalmia, he is not ready to believe that the diplococcus found in the secretion of acute trachoma is the specific cause of that disease, though it is met with in the majority of cases; and he is of the same opinion in regard to certain micro-organisms found in catarrhal ophthalmia.

The author believes that in all epidemics of ophthalmia the greater the number of cases the severer will be their type; secondly, that the severity of the malady stands in direct ratio to its rapidity of spread; thirdly, that the earlier cases are more virulent than the later ones. In this opinion all clinical observers will agree with him. In regard to trachoma, he confirms Raehlmann's conviction that the disease is incapable of atmospheric dissemination.

A great deal of space is taken up with the discussion of the management of epidemic ophthalmia, and the most minute directions are given for the care not only of the patient, but of the attendants. The measures which the author has

lopted for stamping out the disease are formulated as fol-ws: "1. Isolation of every affected child. 2. Skilled medi-l treatment and nursing. 3. Systematic inspection of all ·es. 4. Examination of every candidate for admission to ıe school. 5. The use of the 'jet-system' for washing and athing. 6. Separate towels, sponges, beds, linen, clothing, tc. 7. Fresh air, sunlight, clean water, good food, avoid-nce of overcrowding, and perfect sanitary surroundings."

In the section on follicular granulation of the conjunctiva he author agrees with Adamük and other painstaking ob-ervers in carefully distinguishing between follicular conjunc-ivitis and trachoma. The former arises from the irritation lue to imperfect sanitary surroundings, while the latter is :xclusively due to specific infection. Furthermore, he does ıot believe that the one disease predisposes to the other. He lraws the following conclusions as to the nature of follicular granulations: "1. In man the so-called follicular granulation is visible to the naked eye. It is present in almost all persons under twenty years of age. 2. It does not constitute the initial ·tage of the specific disease, trachoma. 3. It is not satisfac-torily proved to be the immediate and direct outcome of an unhealthy environment. 4. The evidence that it predisposes to trachoma is by no means decisive. 5. It forms in all like-lihood an expression of what may be termed the 'adenoid activity' of young subjects. It is strictly comparable with the follicular projection of the pharynx."

The third section is the fullest in the book and is devoted to the treatment of trachoma and its complications. It be-gins with an introductory sketch of the history of this form of ophthalmia, and incidentally mentions everything that has been suggested or tried for its relief and cure. When the author comes to speak of operative procedures, he states decidedly that excision of the upper fornix, if properly carried out, is invariably followed by good results, but his illustrations are altogether too schematic and clean-cut to be of much benefit to the inexperienced surgeon. He approves of treatment by "expression" in trachoma of recent origin and in some cases of old and obstinate trachoma. He natu-rally prefers his own model of "roller-forceps." The escha-rotic treatment receives full discussion, and a combination of this method with surgical procedures he thinks forms the speediest, safest, and most rational means of attacking the disease. The subsection on the treatment of the complica-tions of trachoma is sufficiently illustrated, but the illustra-tions are too schematic and therefore are not good ones.

In the treatment of follicular conjunctivitis the author considers that the most useful treatment in the larger num-ber of cases is with ointments of the salts of lead, the sub-acetate being preferred, provided the structural changes pre-dominate over the catarrhal. The application of strong reme-dies in these cases he thinks is attended with risks.

The book is well printed, but it is on glazed paper, and this, from the standpoint of the ophthalmologist, is a great objection and much to be deprecated.

Color-vision and Color-blindness. A Practical Manual for Rail-road Surgeons. By J. Ellis Jennings, M. D., Lecturer on Ophthalmoscopy and Chief of the Eye Clinic in the Beau-mont Hospital Medical College, etc. With Illustrations. Philadelphia: The F. A. Davis Company, 1896. Pp. ix–115. [Price, $1.]

This little book is divided into ten chapters, with an index and list of references. In the first chapter we have a brief historical sketch of the subject from the first reported case, in 1684, to the present day.

The second chapter is devoted to a short account of the physiological anatomy of the retina, including a description of Mariotte's blind spot, the visual purple, the field of vision, and the principles of the perimeter.

The third chapter treats of the physics of light and color-sensations, including the composition of white light, mixed colors, complementary colors, after-images, and the sensitive-ness of the retina to color.

In the fourth chapter the author discusses briefly, but with sufficient clearness, the various theories of color-perception and color-blindness, but admits that no one of them fully ex-plains the phenomena in question.

The fifth chapter is devoted to a discussion of color-blind-ness, including its classification, its frequency, its tendency to heredity, the influence of education and social condition upon its occurrence, the possibility of palliating or curing the de-fect, its dangers, and the adoption of a new system of signals. The author here calls attention to two points which should be remembered: First, the possible existence of unilateral color-blindness, which makes it necessary that each eye should be tested separately; and, second, that, although education may improve a normal color-sense, no amount of study will change for the better a color-sense which is defective or wanting. In regard to the adoption of a new system of signals, he thinks that nothing yet has been offered which is an im-provement upon the system in general use at the present day.

In Chapters VI and VII the author takes up the subject of the methods of detecting color-blindness and the various tests with worsteds, pseudo-isochromatic tests, contrast tests, and special tests, and he is wisely emphatic in saying that we can accurately determine how a man sees colors only by mak-ing him pick out and place together those colors which ap-pear to him to be the same. This is the principle of testing which has been found to be the most practical and certain of all. The author's test has the advantage that the assortment of worsteds is sufficiently large to allow the person under ex-amination full play in matching the sample color.

Chapter VIII is of special interest to ophthalmologists, for it treats of acquired color-blindness from optic neuritis, from atrophy of the optic nerve, from injury, and from the toxic effects of tobacco. There is a good short paragraph on the field of vision in nerve lesions. The author has concluded from his own observations that the field is pathological when in its upper, inner, and lower parts the red limit sinks below 25° and the green limit below 20°; and, in the outer part of the field, when the red limit is below 40° and the green limit below 30°. He believes that re-entrant angles, even for one color with normal outer limit, intermingling of the color limits, destroying their normal succession, and changing con-centric curves into zigzag lines must always be considered as pathological.

In the ninth chapter we have an excellent account of the Pennsylvania Railroad Company's instructions for the ex-amination of employees as to vision, color-blindness, and hearing.

The book is extremely well printed on good, thick paper, is sufficiently illustrated for the purposes of a manual, and may be commended to any one who is interested in the sub-ject.

The Johns Hopkins Hospital Reports. Report in Pathology, IV. Contents: Deciduoma Malignum, by J. Whitridge Williams, M. D.

In this report Dr. Williams describes a very interesting case of malignant neoplasm of the uterus, with metastatic

growths in the vulva, vagina, lungs, liver, kidney, and spleen.

Attention was first called to the case a week after parturition by the appearance in the right labium majus of a tumor, which rapidly extended, became necrotic, and in less than three months after its discovery caused the death of the patient from septicæmia.

The primary tumor, situated in the posterior wall of the body of the uterus, presented a necrotic surface on the interior of that organ and had irregularly invaded the muscular layers. Histologically, the tumor presented two distinct features of special interest: 1. The principal mass of the new growth consisted of bands of tissue of varying thickness composed of large epithelioid cells surrounding alveolar spaces devoid of endothelial lining and containing blood, fibrin, and leucocytes. Supporting stroma and blood-vessels were entirely wanting. 2. Another portion of the neoplasm consisted of the syncytial bands so well described by Gottschalk, Marchand, and others, projecting into large, irregular spaces filled with blood. Dr. Williams believes that the epithelioid cells are not decidual cells, because of the absence of intervening stroma and blood-vessels, and that they are not derived from the stroma of chorionic villi, because of their distinctly epithelioid form. Contrary to the usual interpretation, he finds in them no trace of Langhans's "Zellschict," and concludes that these epithelioid cells, which constitute the larger part of the tumor, are probably syncytial bands cut transversely. He did not examine freshly teased specimens.

It is difficult to understand why a single histological element should be so arranged that in one portion of this tumor it appears in sections as epithelioid cells, and in another, entirely separate, portion as distinct syncytial masses. Such an explanation would be more acceptable if the epithelioid cells and syncytial masses were found uniformly distributed. It may be that the material was not so well preserved as Gottschalk's was, with whom the author differs entirely, perhaps rightly, as to the histogenesis of the individual cells. However, from the careful histological description and from the excellent drawings, it is perfectly evident that the case belongs to that rare class of malignant neoplasms arising from chorionic villi. All the literature has been carefully considered in the article, with the exception of the second part of Marchand's work, and Fränkel's last discussion in the *Archiv für Gynäkologie*, which have since appeared, and in both of which there is confirmatory evidence of the importance of Langhans's "Zellschict" in the development of these tumors. From the descriptions of the cases thus far reported it must be concluded, as Dr. Williams states, that at least two varieties of neoplasm are represented, and it may not be wise even for clinical purposes, while it certainly encumbers the study of these very fatal tumors, to class them all under the head of "deciduoma malignum."

A History of the Chronic Degenerative Diseases of the Central Nervous System. By Thomas Kirkpatrick Monro, M. A., M. D., Fellow of the Faculty of Physicians and Surgeons of Glasgow, etc. Glasgow: Alexander Macdougall, 1895. Pp. vi–82.

The physician who recognizes symptoms only and is able to indite a proper prescription for each one that appears to him in his practice is only half a physician. He must identify himself with the past of his art as with the present, that he may be the embodiment of a medical man replete with the knowledge of the historical as with that of the clinical side of his profession. In these days of exhaustive and exhausting specialism, it is difficult to obtain an audience for the purely historical, and yet in the little work under consideration, an elaboration of his graduation thesis, Dr. Monro has made a valuable and interesting contribution to the history of medicine. The work shows careful collation and exclusion, and is in no sense provincial. The style is dignified, as historical work requires, and flowing, as readability demands. To the physician who is a student it may be cordially commended.

La Matière vivante. Par F. Le Dantec, maître de conférences à la Faculté des sciences de Lyon. Avec une préface de M. Alfred Giard, professeur à la Sorbonne. Paris: G. Masson, 1895. Pp. 5 to 191. [*Encyclopédie scientifique des aide-mémoire.*]

The author of this little work, in his study of protozoa and their prototypes, has carefully refrained from instituting comparisons with higher beings which might lead him to false conclusions. He tries to show that the principal phenomena of elementary life, such as motion, nutrition, and assimilation, are dependent upon the same physical and chemical laws which dominate higher animal life. These phenomena, the author maintains, occur in consequence of the reaction of the protoplasm to oxygen, to water, and to the many materials essential to their elementary life. With the exception of the assimilative powers, these vital phenomena appear to be independent of the nucleus of the being under consideration. The author insists that these appearances should be considered the manifestations of the physical and chemical properties of the protoplasm, which is itself a living substance. He concludes that all those substances must be considered living matter the reactions of which to water, oxygen, etc., give rise to those phenomena which we are accustomed to call the manifestations of elementary life. By this reasoning one is naturally forced to believe in a strictly defined, specific chemical protoplasm for every form of cell life, which will certainly not find favor with the adherents of Haeckel.

This little work is well written and interesting, and, like its companions, is well and clearly printed.

BOOKS, ETC., RECEIVED.

The Toxic Amblyopias. Their Classification, History, Symptoms, Pathology, and Treatment. Being an Essay to which was Awarded the Alvarenga Prize of the College of Physicians of Philadelphia, October, 1894. By G. E. de Schweinitz, A. M., M. D., Professor of Ophthalmology in the Philadelphia Polyclinic, etc. With Forty-six Illustrations and Nine Plates. Philadelphia: Lea Brothers & Co., 1896. Pp. viii–17 to 238. [Price, $4.]

Deaf-mutism. A Clinical and Pathological Study. By James Kerr Love, M. D., Aural Surgeon to the Glasgow Royal Infirmary, etc. With Chapters on the Education and Training of Deaf-mutes. By W. H. Addison, A. C. P., Principal of the Glasgow Deaf and Dumb Institution. Glasgow: James MacLehose & Sons. London and New York: Macmillan & Co., 1896. Pp. xii–369. [Price, $2.75.]

Atlas of the Diseases of the Skin, in a Series of Illustrations from Original Drawings, with Descriptive Letterpress. By H. Radcliffe Crocker, M. D., F. R. C. B., Physician to the Department for Diseases of the Skin, University College Hospital, etc., London. Fasciculus XIV. Edinburgh and London: Young J. Pentland. New York: Macmillan & Co., 1895. [Price, $6 each part.]

Text-book of General Pathology and Pathological Anatomy. By Richard Thoma, Professor of General Pathology and Pathological Anatomy in the University of Dorpat. Translated by Alexander Bruce, M. A., M. D., F. R. C. P. E.,

R. C. S. E., Assistant Physician and formerly Pathologist to Royal Infirmary, Edinburgh, etc. Vol. I. With Four ndred and Thirty-six Illustrations. London: Adam and arles Black. New York: Macmillan & Co., 1896. Pp. xiv–4. [Price, $7.]

Fifth Annual Report of the State Board of Medical Exam-rs of New Jersey, 1895.

Prospectus of the Hospital for the Relief of Crippled and formed Children.

Criminal Abortion. By William McCollom, M. D., Brook-n. [Reprinted from the *Journal of the American Medical sociation.*]

Contribution à l'étude des tumeurs bénignes du voile du lais. Par le Dr. Gouguenheim, médecin de l'hôpital riboisière, et M. H. Ripault, interne des hôpitaux. [Ex-ait des *Annales des maladies de l'oreille, du larynx, du nez et pharynx.*]

Contribución al estudio clínico de las diarreas infantiles. r el Dr. José E. Ferrán. [Publicado en los *Archivos de la dicl nica.*]

The One Hundred and Sixth Annual Report of the Board Trustees of the New York Dispensary for the Year 1895.

Miscellany.

The Milk Question.—In the March number of the *Archives f Pædiatrics* there is an editorial on this subject in which the riter says that this question is one of the most important at have come before the pædiatric practitioner during re-ent years, and with the increasing tendency to the artificial eeding of infants it will continue to grow in importance.

Two questions, he says, must be considered in deciding pon the wholesomeness of milk as an article of diet. They elate to the quality of milk as regards its component ele-ents and attenuation, and to its character as regards con-amination. The watering of milk and the addition of in-ocuous substances are frauds which deserve heavy penalties. hey may impair health or even cause death by depriving an nvalid or an infant of proper nourishment. The injury thus rought, however, is small compared with the disastrous con-equences that may result from the contamination of milk with decomposing animal matter or pathogenic bacteria.

The importance of this subject, says the writer, is fully ecognized by all pædiatric practitioners, and it has been the ubject of discussion in numerous societies and a frequent opic in medical journals. The results of the work already done, he says, are fully apparent. The pioneer work of Dr. Rotch in Boston and Dr. Coit in Newark has resulted in ac-complishing great good far beyond the regions directly affect-ed. The conditions in New York are vastly improved; the same is true of several other large cities. Dr. Snow, in Buf-falo, has inaugurated a movement which is already bearing good fruit. Other places, he says, might, no doubt, be men-tioned with equal propriety. The most important result of this work has probably been the universal attention which has been directed to the necessity of greater care in the man-agement of the cows and in the methods of conducting the dairy.

In another article in the same journal, entitled The Milk Supplies of Cities, the writer says that, owing to the remark-able tendency of modern times to the grouping of the popu-lation in immense urban communities, the question of the milk supply of cities has rapidly become one of grave im-portance. Next to the water supply, the milk supply has come to be regarded as the most important question in the hygienic branch of municipal affairs. Thus far the attention of boards of health has been almost exclusively directed to the attaining of unattenuated milk. In many cities a practi-cally unattenuated milk can now be obtained. This is par-ticularly true of New York. Until very recently, however, no attempt has been made to exclude milk obtained under unsanitary surroundings. The milk produced in and near large cities, known as *swill milk* or *slop milk*, has been excluded, and in many cases comparatively little is now sold. Attempts on the part of health authorities to regulate the dairy and to secure more hygienic surroundings are very recent. The number of cities which have taken radical measures is still very small. These measures, says the writer, are directed to two ends—namely, the improvement of the hygienic condi-tions of the dairies, and the exclusion of milk obtained from tuberculous or otherwise diseased cows.

In Minneapolis, he says, an inspection and license system has been in force since August. All the dairies and dairy herds from which milk comes to the city are inspected under the direction of the board of health, with the aid of the tuber-culin test, and it is reported that dairymen are anxious to eliminate the diseased animals and obtain licenses.

In Malone, N. Y., the writer goes on to say, the authorities have taken vigorous measures to prevent the sale of milk from diseased animals. In Pittsfield, Mass., the authorities have made an arrangement by which every herd but one, supply-ing milk for sale in the city, has been examined with tuber-culin. Several other cities have adopted similar measures during the past year, and it seems probable, he says, that the number will rapidly be increased.

With regard to the milk supply of New York, says the writer, a very important step in securing better milk was taken in January by the adoption of the following article of the sanitary code: "No milk shall be received, held, kept, offered for sale, or delivered at any place in the city of New York without a permit in writing from the board of health, and subject to the conditions thereof." The board of health has recently been very rigid in its supervision of the milk supply. Over $12,000 were collected in fines during the past year. More wholesome results, however, were attained when the judges began to add imprisonment for from five to thirty days to the fines of offenders convicted for dealing in impure milk.

The board, he continues, is now turning its attention to obtaining milk from hygienic dairies only. Of 184,422 gallons of milk used daily in New York, about 140,000 gallons are produced in the State of New York, where it seems probable that the dairies will soon be brought under control of the State board of health.

Officials of the health department have already examined certain dairies in New Jersey, and the milk derived from them has been excluded. These precautions, he says, together with the new provision of the sanitary code which forbids the sale of milk, except by those who have obtained a special license, and the strict supervision now exercised by the de-partment, bid fair to result in great improvement in the milk supply of the metropolis.

Morphine in the Treatment of Hysterical Anorexia.—In the *Progrès médical* for February 22d M. Dubois gives an account of three very grave cases in which he obtained high-ly successful results with the aid of hypodermic injections of morphine after all other treatment had failed. The treat-ment was as follows: In the beginning the author gave large

doses in order to exert a sudden action upon the stomach. He made use of a solution which contained half a grain of morphine hydrochloride to a cubic centimetre of liquid. Beginning from the first day, from one to three injections of a cubic centimetre each were given according to the effect produced. The patient was told that she would become weak, but that the pains would diminish; also that she would be able to eat and retain the food, which was to be given in half an hour after the injection.

If the morphine is well tolerated, says the author, no inconveniences will arise from the employment of three injections a day, each containing half a grain of morphine, at intervals of four hours.

M. Dubois insists upon the following points: 1. The injections should be given each day at the same hour, and the administration of food half an hour after the injections, with or without forced feeding. 2. The patient must be assured that the food will be retained and will cause no pain.

If this treatment, both physical and psychical, he says, is well directed, in less than three months a rebellious anorexia may be cured. The strength of the solution is diminished from week to week until a final cessation of the use of the morphine is attained, when it will be found that the organism has recovered and that the patient has returned to a normal condition.

In the three cases mentioned by the author there was a radical cure in the first one; in the second case the patient's condition was normal at the time of the report, although she continued to use the injections three times a day; in the third case the patient had been under treatment for a month only, but the results obtained had been thus far even better than in the first two cases.

[It seems to us that the treatment advised by M. Dubois, however efficient it may have proved in his own hands, is not to be recommended, except perhaps in cases in which other measures have had a thorough trial without a favorable result. Even in these exceptional instances great caution appears to be called for in the use of morphine.]

Cantharidin.—Among the formulas given in a recent report of Merck's (quoted in the *Therapeutische Wochenschrift* for February 23d) are the following for the use of his "cantharidinum crystallisatum purissimum":

℞ Cantharidin..... 1 part;
Alcohol..... 1,000 parts;
Distilled water..... 100,000 " M.

The foregoing prescription is one of Dr. Freudenberg's.

He directs a teaspoonful, diluted with water, to be taken three or four times a day in cases of cystitis. Solutions of cantharidin are not very stable; consequently, if the remedy is to be used for a considerable length of time, as in scrofula and tuberculosis, it is better to order it in pill form according to the following prescription:

℞ Cantharidin.. 2 milligrammes (0·031 of a grain);
White bole... 2 grammes (30·86 grains).

M. Divide into thirty pills, of which one is to be taken daily, before breakfast.

Guaiac Resin as a Purgative.—This is the subject of an article, by M. Combemale, which is published in the *Revue internationale de médecine et de chirurgie* for February 25th. Dr. Murrell, says the author, published an article in the *Bulletin médical* for 1891 in which he stated his belief in the efficacy of this drug as a laxative. He had come to this conclusion after having observed such an effect in a patient to whom he had administered the drug for rheumatism. The patient had continued to take the guaiac long after the pain had disappeared, giving as a reason for doing so, that it acted upon the liver and the intestines, and that when he took it before breakfast it acted rapidly and without difficulty on the bowels. Dr. Murrell had then prescribed this remedy for other patients who were of a bilious temperament and suffered from constipation, and found that the results were satisfactory. He recommended the following formula:

Guaiac resin..... 8 grains;
Honey..... 45 "

For the past two years, says the author, Dr. Murrell has used this drug not only as a purgative, but in the treatment of chronic rheumatism, sciatica, amygdalitis, dysmenorrhœa, and other affections, in doses of from forty-five to ninety grains repeated three times a day. The purgative effect was very pronounced. In one case the drug produced an eruption on the arms and legs of the patient and gave rise to a violent itching, which disappeared after the use of the drug had been stopped.

Dr. Murrell's researches, says the author, seemed to show that satisfactory results might be obtained from the use of this drug as a laxative or a purgative, and, for this reason, he concluded to make experimental researches in this direction. For several years, therefore, he studied the effects of the drug and obtained results which, he says, are without doubt incomplete, but sufficiently convincing, he thinks, to lead him to express his opinion on the employment of guaiac. His experiments, in which he used Murrell's formula, were carried out on dogs. During this time, also, he employed the drug as a purgative with a few patients, according to Murrell's directions. Being distrustful, however, he says, of the excessive purgation that followed the ingestion of the doses, he concluded to give the drug in much smaller doses, and in the majority of cases of chronic rheumatism, bronchitis, arteriosclerosis, and other affections in which constipation was temporary, the desired results were obtained with the use of thirty grains a day, but in rebellious constipation these doses had no influence whatever, and, as he did not think it prudent to give more than thirty grains a day, he made no attempt to combat chronic constipation with larger doses. M. Combemale's conclusions, drawn from his clinical experiments, as well as from those carried out on dogs, have shown him, he says, that no benefit accrues from the use of this drug as a purgative, and that he has seen only the dangers that may arise from its employment.

The Third International Congress of Dermatology will be held in London on August 4, 5, 6, 7, and 8, 1896. In addition to papers, the programme includes clinical demonstrations of cases, also discussions on the following subjects: Prurigo, by Dr. Besnier, of Paris; Dr. J. C. White, of Boston; Professor Kaposi, of Vienna; and Dr. Payne, of London. The Ætiology and Varieties of Keratosis, by Dr. Unna, of Hamburg; Professor V. Mibelli, of Parma; Dr. H. G. Brooke, of Manchester; and Dr. W. Dubreuilh, of Bordeaux. The Connection of Tuberculosis with Diseases of the Skin other than Lupus Vulgaris, by Dr. J. Nevins Hyde, of Chicago; Dr. Radcliffe Crocker, of London; Dr. Hallopeau, of Paris; and Dr. G. Riehl, of Vienna. Ringworm and the Tricophytons, by Dr. Sabouraud, of Paris; Professor Rosenbach, of Göttingen; and Mr. Malcolm Morris, of London. The Nature and Relations of the Erythema Multiforme Group, by Dr. P. A. Morrow, of New York; Professor de Amicis, of Naples; Dr. T. H. Veiel, of Stuttgart; and Dr. Stephen Mackenzie, of London. Syphilitic Re-infection, by Mr. Alfred Cooper, of London; Professor Fournier, of Paris; Professor

ang, of Vienna; and Dr. Fitzgibbon, of Dublin. The Duration of the Period of Contagion of Syphilis, by Mr. Hutchinson, of London; Professor Lassar, of Berlin; Professor Camana, of Rome; and Dr. Feulard, of Paris. Malignant Syphilis, by Professor Handlung, of Copenhagen; Professor Tarnovsky, of St. Petersburg; and Professor Neisser, of Berlin.

All persons who intend to join the congress are requested to notify the secretary, Dr. J. S. Pringle, No. 23 Lower Seymour Street, London, W., as soon as possible.

The Hypnotic Action of Scopolamine in the Insane.—The *Revue internationale de médecine et de chirurgie* for February 25th contains an abstract of an article on this subject which appeared in the *Semaine médicale*, No. 2. Two Russian physicians, M. Olderoggue and M. Jurman, says the writer, made a series of experiments with the hydrobromide of scopolamine, and found that the drug possessed a true value as a hypnotic in the treatment of the insane. Administered hypodermically, in doses varying from 0·003 to 0·015 of a grain, it induced in the majority of the subjects a sleep which lasted from three to ten hours. On awakening, the patients appeared much calmer than before the administration of the drug. This effect was especially pronounced in maniacs, but it was not so marked in acute lypemania. In chronic insanity its hypnotic action was also manifest. In delirium tremens, however, it tended only to weaken the patient, and had no hypnotic action whatever.

The Treatment of Burns.—The *Lancet* for February 22d contains a report of a recent meeting of the Leeds and West Riding Medico-chirurgical Society at which Mr. W. H. Brown read a paper on this subject. At the present day, he said, the treatment of burns was unsatisfactory. The death-rate from burns of all degrees in the Leeds General Infirmary was identical with that of twenty years ago.

The causes of death were shock and septicæmia, and the author recommended morphine to allay the former and to allow the parts to be carefully cleansed and dressed. To keep the patient warm and to protect the burns from the air, he advocated the continuous use of a warm bath rendered antiseptic with boric acid. He thought that carbolic acid and mercury were too easily absorbed to be used. To lessen or to prevent septicæmia, he suggested that, where it was possible, after the administration of ether, the surgeon should cut or scrape away the tissues that appeared to be destroyed beyond a chance of recovery, and then apply an ordinary surgical dressing. At present, Mr. Brown said, he used eucalyptus oil, which was not toxic or irritating.

Mr. J. W. Teale stated that he had used chloroform when he applied the dressings, and thought that it decidedly lessened shock.

Mr. Pridgin Teale thought that carbolic acid combined with the sloughs and formed a kind of protecting covering which would be comparatively harmless.

Dr. Chadwick and Dr. J. B. Hall were strongly in favor of the method employed in Vienna, that of using continuous warm baths throughout the treatment.

Mr. Littlewood said that some time ago atropine had always been given to allay shock. He thought that the warm bath treatment was the best. He believed that carbolic acid was not safe for the dressing of large burns, owing to its ready absorption.

Mercurial Inunctions in the Treatment of Diseases of the Nervous System.—Dr. J. Marschner (*Ztschr. f. Heilkunde*, xvii, 1) reports fifty-six cases of diseases of the nervous system treated with thorough courses of mercurial inunction followed by the use of sodium iodide—namely, eleven cases of syphilitic disease of the brain and the spinal cord, eleven cases of multiple sclerosis, six cases of tumor of the brain, six cases of cortical and capsular lesions, two cases of bulbar paralysis, fourteen cases of tabes, three cases of myelitis, one case of amyotrophic sclerosis, and two cases of multiple neuritis. In some of these cases there was a positive history of syphilis, and in some of them there was not. A cure took place only in four cases of syphilis of the central nervous system and in one case of multiple neuritis, and in the latter an intercurrent attack of typhoid fever possibly exercised a beneficial influence. Real improvement was noted only in the cases known to be syphilitic and in one of myelitis in which (according to Dr. Schwarz, the author of an abstract of the article published in the *Wiener medizinische Blätter* for February 20th) syphilitic infection could not be excluded. In the majority of the cases, forty-three in number, including all the cases of tabes, there was either no result or only a temporary amelioration of single symptoms, such as often occurs, says Schwarz, without any medication. On account of this poor showing, Schwarz questions the author's dictum that cases of disease of the nervous system should be treated with mercurial inunction even if there is an entire absence of a syphilitic history, provided other treatment has proved unsatisfactory and the patient's general condition is not such as to forbid the use of inunctions.

Nerve Suture and Neurolysis.—A. Wölfler (*Prag. med. Woch.*, 1895, Nos. 47 and 48; *Ctrlbl. f. Chir.*, Feb. 22, 1896) advocates suturing in cases of paralysis due to division of a nerve, no matter whether the injury is recent or of several years' standing. It is of the greatest importance, he says, to place the sutured nerve under conditions as nearly as possible physiological by freeing it from cicatricial bands and distortions; furthermore, every effort should be made to secure union by first intention. The commonest occasion for neurolysis, or the operation of freeing a nerve from adhesions, he has found after fractures of the humerus. The first symptoms of such adhesions are neuralgia and sensory irritation; subsequently muscular atrophy and disturbances of the nutrition of the skin occur; finally, motor affections and impaired sensibility follow. In the treatment of these cases, conservative measures should be tried at first, especially the use of electricity; if they fail, neurolysis is indicated.

He gives the following table of his results:

A. Suture of Nerves.
  I. Immediate Suture (direct union).
    a. *Primary.*
      1. The facial nerve, after injury. Perfect recovery.
      2. The median and radial nerves. Perfect recovery.
    b. *Secondary.*
      3. The median nerve. Complete recovery.
      4. The radial nerve. Complicated fracture. Resection. Recovery.
      5. The fifth and sixth nerves of the cervical plexus. Immediate recovery.
  II. Mediate Suture (indirect).
      6. The radial nerve. Formation of constricting bands. Final result unknown.
      7. The peroneal nerve. Nerve-grafting. The same.
B. Neurolysis.
      8. The peroneal nerve, after osteotomy. Recovery which has persisted for seven years.
      9. The radial nerve. Fracture. Recovery.
      10. The radial nerve. Exostosis. The same.

The Medical Service of the City Hospitals and the Civil Service Law.—A motion was lately laid before the Hon. George P. Andrews, of the Supreme Court of the City and County of New York, by Dr. Frederic R. Sturgis, for a writ of peremptory mandamus compelling the commissioners of public charities to make appointments on the medical staffs of the city hospitals in accordance with the civil service rules. Justice Andrews has dismissed the motion and is reported to have said:

"The visiting and consulting physicians and surgeons, mentioned in the motion papers, are neither 'officers' nor 'employees' within the meaning of the so-called civil service acts. They receive no compensation, their positions, so far as pecuniary benefit is concerned, are purely honorary, and it is inconceivable to me that the Legislature should have intended that the most eminent members of the medical profession should be subjected to the indignity of an examination, either competitive or non-competitive, as a condition precedent to their being permitted to render gratuitous services in the hospitals which are under the control of the city. The objection that the defendants have delegated their appointing power is not tenable. They are under no legal obligation to select their appointees from the whole medical profession. They could appoint only those who had graduated from certain schools or who were of a certain age or who had had different kinds of experience, so they have a right to appoint those who have been nominated in the manner set forth in the motion papers if they see fit. Besides, they are under no legal obligation to confirm such nominees and are at liberty to appoint others, if they prefer to do so."

Delivery through a Central Rupture of the Perinæum.—An example of this rare occurrence is recorded in the *Centralblatt für Gynäkologie* for February 22d by Dr. A. Sitzinski, of the Court Hospital of Peterhof, Russia, who had previously reported it before the St. Petersburg Society of Obstetrics and Gynæcology. The patient was a primipara, twenty-six years old, well built and well nourished, but nervous and sensitive. The waters broke in eleven hours after the onset of labor pains. After a short pause, the pains set in again with normal force and frequency and soon the head appeared at the vulva with each pain, but retreated in the intervals; with the final pains, however, the head no longer underwent these movements, but the perinæum became greatly distended, especially in the vicinity of the anus, which was itself highly protruded. To avert rupture of the perinæum, the midwife made two lateral incisions about a third of an inch deep. A fresh pain came on, the head was more thoroughly visible at the vulva, and the perinæum was more than ever distended, when suddenly the midwife felt under her hand something which she at first took for a bunch of hæmorrhoids expelled from the anus. This turned out, however, to be the child's nose, together with an adjacent part of its face, plainly visible through a rupture near the anus. In a moment more the same pain expelled the whole head through the rupture. The next pain, which followed after a brief pause, drove the entire child through the rupture, and in ten minutes more the secundines came through the same channel. Ergot was given, the uterus contracted well, the hæmorrhage was insignificant, and the woman was feeling pretty comfortable.

The child was fully developed and well nourished. The dimensions of its head were as follows: Antero-posterior diameter, 13·5 cm. (about 4·5 inches); biparietal diameter, 9 cm. (about 3 inches); bitemporal diameter, 8·25 cm. (about 2·75 inches); diagonal diameter, 15·75 cm. (about 5·25 inches). In the posterior wall of the vagina there was found an enormous rent divided into two parts by a transverse band. Closer examination showed that the vaginal orifice had been driven upward, and that the transverse band was the unruptured posterior commissure of the vulva. The central rupture of the perinæum had the shape of an irregular polygon, roughly triangular. Its posterior boundary was formed by the junction of the skin and mucous membrane at the anus. The edges of the wound were torn and ragged, and in places showed crushed, dusky-red tissue. In the depths of the laceration there were two longitudinal ruptures of the posterior vaginal wall, one on each side of the columna rugarum. The commissure, which had survived the injury, was about half an inch thick. The rectum and anus had not been injured. A deep laceration was found just to the right of the mouth of the urethra, together with several superficial fissures.

The posterior commissure was at once divided in the median line, all crushed tissue was trimmed away from the surfaces of the wound, and the laceration was closed by colpoperinæorrhaphy, full antiseptic precautions being taken. This was on the morning of the 8th of August. On the 11th the sutures had cut through the tissues and were removed. This disclosed particles of gangrenous tissue, and the surfaces were cleansed and painted with tincture of iodine. In two weeks after the labor a secondary suture operation was performed, but it was not perfectly successful, partly on account of the flabby state of the parts and partly because a great proliferation of connective tissue interfered with nice adaptation. A small vagino-perineal fistula remained. The mother and child left the hospital, well, on the 31st of August.

Potassium Nitrate in the Treatment of Burns.—In an article published in the *Revue médicale* for February 16th the writer says that Dr. Poggi, in a recent thesis on this subject, gives an account of a treatment that has given excellent results in all kinds of burns of whatever degree. It consists in the employment of potassium nitrate, which is administered in baths or in applications of compresses that have been wet with a saturated solution of this salt, or in lotions that contain the nitrate.

According to M. Poggi, the nitrate acts especially as a refrigerant. As it becomes dissolved in the water it produces a notable lowering of the temperature of the liquid of from 5° to 9° F. If a burned hand or foot is plunged into a basin of water to which a few spoonfuls of the nitrate has been added, the pain ceases rapidly; if the water becomes slightly heated, the pain returns, but it is allayed as soon as a fresh quantity of the salt is added. This bath, which is prolonged from two to three hours, may bring about the definitive disappearance of the pain and even prevent the production of blisters. The application of the compresses also exercises the same influence. By this means the pain is allayed and cicatrization takes place without delay.

Another remedy in the treatment of burns is calcined magnesia, which, says the writer, has been employed by M. Vergely, who obtained favorable results with it in burns of the first and second degree. The affected parts are covered with a thick layer of a paste which is prepared by mixing the calcined magnesia with a certain quantity of water. This paste is allowed to dry on the skin, and when it becomes detached and falls off it is replaced by a fresh application. Very soon after the paste is applied the pain ceases, and under the protective covering formed by the magnesia the wounds recover without leaving the cutaneous pigmentation which is so often observed to follow burns that have been allowed to remain exposed to the air.

Original Communications.

CATHETERISM OF THE URETERS IN THE MALE AND IN THE FEMALE WITH THE HELP OF CASPER'S URETER CYSTOSCOPE.*

BY WILLY MEYER, M. D.

SINCE Nitze's new, simple, and handy cystoscope has been in use (since 1887), every cystoscopist has hoped for and expected a new instrument constructed according to the same pattern for catheterism of the ureters.

In my treatise On Cystoscopy, in *A System of Genito-urinary Diseases, Syphilology, and Dermatology*, edited by Dr. Prince A. Morrow, vol. i, page 449,† I stated the uselessness of Brenner's and Boisseau du Rocher's cystoscopes, until then the only ones designed for this purpose, both of which I had tried myself, and laid down my own ideas with reference to solving this task from a mechanical standpoint. I also explained why we could not attempt to make the instrument here.‡

That the cystoscope for catheterizing the ureters of *both* sexes had to be constructed according to the principles originally laid down by Nitze, was always to my mind a matter of fact. No other instrument can bring more easily and more thoroughly into view the base of the bladder, and with it the ureteral openings. To see and approach the latter is, of course, the *sine qua non* in this kind of work.

It is greatly to be regretted that Nitze's inventive faculty began to apply his cystoscope for the "treatment" of bladder diseases (operative cystoscopy) before he had entirely exhausted the diagnostic side of its usefulness. Thus it happened that others undertook the task which, by virtue of Nitze's former ingenious inventions in this field, should have been accomplished by him.#

On January 9, 1895, Dr. L. Casper, of Berlin, presented his new ureter cystoscope to the Berlin Medical Society, demonstrating its practical use on two men.‖ In the discussion following his demonstration Nitze claimed priority for this instrument. He asserted that Casper had seen his (Nitze's) cystoscope before starting to make one of his own design. Casper strongly and repeatedly objected to this statement. To enter into this rather fervent controversy△ would be futile. The profession no doubt owes thanks to Dr. Casper for his efforts in perfecting a cystoscope that permits of catheterizing the ureters with comparative ease, and *in bringing it into the market.* That which Nitze stated had been used by himself for years and had been demonstrated by him before the International Medical Congress at Rome in 1893, the meeting of German Naturalists and Physicians at Vienna in 1894, and the Congress of the German Surgical Society at Berlin in 1894, is so far nowhere for sale. Thus it seems that we have a right to call *this* new important instrument "Casper's ureter cystoscope"

Its new features, in comparison with the Nitze cystoscope No. 1, are:

1. The shank of the cystoscope (see figure) carries a straight groove, which can be transformed into a canal with the help of a movable lid (Li.) with a handle (H.). It is to receive the ureter catheter (U. C.). The outer end of this canal (O. E.) projects over a semicircular hard-rubber plate (Pl.) which forms a convenient handle, and, being situated about an inch and a half away from the ocular end of the telescope (O.), can easily be reached by the operator's hands. The vesical end, about six millimetres in front of the prism (Pr.), is worked out in such a way that the ureter catheter, emerging into the bladder, when pushed from the outside, forms with the shank of the cystoscope an angle of forty-five degrees. By this means we are enabled to enter the ureteral orifice with great ease, as the vesical end of the ureter and the fundus of the bladder form an angle of about the same size. But the angle of forty-five degrees between the catheter and shank is produced only if the lid be pushed in as tightly as possible. The canal is situated on the concave side of the cystoscope, the one which carries prism and lamp (La.). This is a very wise arrangement, and decidedly distinguishes Casper's cystoscope from Brenner's and Boisseau du Rocher's. Both the latter carry the straight tube on the convex side, and, having no prism, force the cystoscopist to inspect the ureteral opening through a simple straight telescope. In order to do this the handle naturally has to be raised until it is almost vertical. For obvious reasons the result thus generally was very unsatisfactory. But in letting the catheter pass out right in front of the prism, its tip, somewhat magnified, always remains under the control of our eyes, and we handle the instrument just as we always use Nitze's cystoscope for the inspection of the fundus of the bladder.

2. The lamp is situated behind the prism in the longitudinal axis of the instrument—Lohnstein's modification (see figure). The other cystoscopes carry the lamp in the tip of the beak. Lohnstein alleges* for his modification the following special advantages over Nitze's original instrument:

(*a*) Foreign bodies in the bladder, larger stones, and tumors, that often have the tendency to fill out the concavity of the beak of Nitze's cystoscope, and will then not be seen on account of not being illuminated, can be nicely observed.

(*b*) Tumors situated at the side and above the internal urethral orifice will not escape the inspecting eye. These

---

* Read before the Section in General Surgery of the New York Academy of Medicine, November 11, 1895.

† New York: D. Appleton & Co., 1893.

‡ *Ibid.*, p. 489.

According to Nitze—Zum Katheterismus der Harnleiter beim Manne, *Centralblatt für Chirurgie*, 1895, No. 9—he really was the first who succeeded in constructing a ureter cystoscope.

‖ *Dtsch. med. Woch.*, 1895, No. 7.

△ See *Centralblatt für Chirurgie*, 1895, Nos. 9, 11, 14, 19, and 26.

* *Deutsche med. Wochenschrift*, 1895, No. 4, p. 59.

will generally not come into view by performing cystoscopy with Nitze's instrument No. 1.

(c) Beaks of different shape and length can be made and screwed on the instrument.

3. The beak of the instrument (B.) is made in one piece with that portion which carries the lamp.

The arrangements as described under Nos. 2 and 3 permit of shaping the beak according to necessity (hypertrophy of the prostate, etc.). Patients will thus more rarely experience the slight burning sensation if the tip of the beak should touch the fundus.

4. If the lid that* covers the canal be pulled out, a straight metal mandrel (M.) can be inserted into the groove. By doing this the small catheter which had been pushed through the canal into the ureter is lifted out of the groove and thus liberated. Now the cystoscope can be withdrawn, while the catheter remains *in situ*. The latter is an English web catheter of No. 4 French gauge. It is sixty centimetres (twenty-three inches and a half) long. A long thin wire mandrel obstructs its lumen up to about two inches from its tip.* The catheter is flexible, yet has sufficient stiffness to enter the vesical end of the ureters and to pass upward to the pelvis of the kidney if gently pushed from the outside.

5. The ocular lens of the telescope is not in the same axis with the other lenses. It is moved to a place two centimetres below the canal described above under No. 1. This is done to enable the cystoscopist to handle the lid of the canal and the steel mandrel with convenience and ease, and to push forward the ureter catheter or its substitutes in a straight line. The picture is reflected to the ocular lens with the help of a double prism. The view of the interior of the bladder is nevertheless just as brilliant and satisfactory as when it is seen through the other cystoscopes.

The shape of the shank is oval, not round; its size, No. 24 French gauge. It passes a urethra of this dimension without difficulty. The electric current is conveyed to the instrument by slipping a doubly perforated semicircular hard-rubber plate over two projecting wires, which are fastened on the hard rubber handle of the instrument (+ and —). A screw (S.) makes and breaks the current. The cystoscope is manufactured by W. A. Hirschmann, Berlin, N. Germany.†

Until January 9th, the date of reading his article before the Berlin Medical Society, Casper succeeded in catheterizing the ureters with this instrument thirty times in twenty-two patients. Of these, twenty-one were men. He failed in accomplishing his purpose only once. The majority of the patients were afflicted with chronic gonorrhœa, a small number had cystitis, one had hypertrophy of the prostate. Two of Casper's assistants also found no difficulty in using the new cystoscope.

My personal experience is so far (November, 1895) based on only three patients, one male and two female. In these I have catheterized both ureters simultaneously—*i. e.*, six times in all. I have been in possession of this instrument for a very short time, and have used it in my private practice according to strict indication only. In a fourth patient, a gentleman of Brooklyn, who had vesical catarrh and probably unilateral nephrolithiasis, in whom I tried to catheterize the ureters five days ago, I did not succeed in finding the ureteral openings. I had clearly seen them and had been able to demonstrate them to his brother, who is a physician, five days before this attempt, on inspecting his bladder with the ordinary cystoscope. The trigonum and fundus were at the last examination injected and the tiny apertures thus rendered too indistinct. It would be incorrect to call this attempt a failure. We necessarily must find the mouth of the ureters before we can enter them with an instrument. The vesical catarrh of this patient is now being carefully treated, and I hope soon to be able to enter the ureters with the same ease as I did in my first male patient.*

Since reading this paper I have had occasion to catheterize the ureters of one more lady and four more men, in all instances successfully. One of the patients had a marked hypertrophy of the prostate. To my surprise, I did not find the procedure difficult at all. On the contrary, it impressed me as being easier than in patients whose prostate had the normal size. Thus I have succeeded in catheterizing the ureters with the new instrument, in all so far, sixteen times—six times in female and ten times in male patients. I consider the procedure an easy one, and believe that it will always be successful where the bladder will hold from five to six ounces of fluid, and where the mouth of the ureters can be well seen and approached.

In performing catheterism of the ureters with Casper's instrument in patients who need this examination, I should advise, provided the three cardinal conditions for employing cystoscopy are fulfilled,† to proceed as follows:

1. Wash and cocainize the bladder according to well-known rules.‡

2. Fill the bladder with from five to seven ounces of

* In the newest pattern (December, 1895) the mandrel fills the lumen in its entire length, and the outer end of the catheter is funnel-shaped.

† It is for sale in New York by Messrs. R. Kny & Co., 17 Park Place. Price, $15.

* Meanwhile the patient has gone on a trip to Japan. Before his departure I had no opportunity to perform the examination.

† See author, in Morrow's *Handbook*, vol. i, p. 455.

‡ *Ibid.*, p. 456.

ear fluid. It is necessary to inject a little more than the sual average amount for a cystoscopic examination—viz., ve ounces—because there is some continuous leakage longside the ureter catheter. Of course the latter can ot fit in the canal as snugly as a mandrel does; it has to emain freely movable. Consequently there must be leakge, as the intravesical pressure is greater than the atmospheric. The fluid in the bladder is therefore slowly ebbing way. By placing the patient in Trendelenburg's posture f about twenty-five degrees during the examination, we an reduce this leakage a good deal; also by slipping over he external entrance to the canal a short rubber tube of ery small calibre, just large enough to permit of moving he ureter catheter. Until the ureteral openings have been ound this tube should be well pressed against the catheter. A simple sling of a thread will also suffice. On the other and, it is not wise to fill the bladder with too much fluid.* ix ounces should be the average amount. A beginner nay probably do well, in order to save time and to succeed, irst to use the ordinary cystoscope for ascertaining the ituation of the mouth of the ureters and then to introduce he ureter cystoscope.

3. Push the ureter catheter down to the internal opening of the canal, the lid of the latter being well in place; ntroduce the instrument.

4. As soon as the interior of the bladder has been satfactorily inspected and the ureteral openings have come nto view, approach one of them.† A trained cystoscopist knows how to do this. He slightly raises the handle of he instrument and carries it over to the opposite side of he patient, at the same time pushing it in a little or pulling it out until the orifice is in the focus. By bringing he prism as near to it as possible, we greatly magnify the iny hole, and can observe in a beautifully clear manner how the catheter becomes engaged in the opening, and, if pushed from outside, passes on and on.

I have found it practicable to pull out the lid a little, say a quarter of an inch, before pushing the catheter out of the canal into the bladder. Its rather delicate tip is thus better preserved, and not roughened by the borders of the narrow hole.

The lid must then *at once* be pushed back into place. As mentioned above, this is absolutely necessary in order to let the catheter emerge at an angle of forty-five degrees. If this rule is not adhered to the catheter will not enter the ureter, no matter how we may turn or push or pull the cystoscope.

5. Catheterism of the ureter having been successful, the wire mandrel is withdrawn from the catheter.‡ Urine generally at once begins to flow, drop by drop, at intervals.* I should strongly advise always to withdraw the mandrel as soon as the catheter has entered the lower end of the ureter for about one to two inches: this to find out, as long as the cystoscope is in the bladder, whether the lumen of the catheter is not obstructed. As soon as the urine flows, one glance through the instrument will tell us whether the catheter is in its proper place. If we push the catheter farther up toward the pelvis of the kidney and lift it out of the canal, pull out the cystoscope and *then* withdraw the mandrel, our entire procedure may prove to be a failure. In one of my last cases—the gentleman with hypertrophy of the prostate—I made this mistake. I had gathered about eight cubic centimetres of urine from the right (presumably diseased) kidney. Having entered the left ureter, I wanted to save the patient the little annoyance of the further presence of the cystoscope. I pushed the catheter quickly up toward the kidney for about twenty-five centimetres, liberated it, and removed the cystoscope. Now I pulled out the mandrel. No urine escaped. I pulled and pushed the catheter, and aspirated with a powerful syringe: no urine. I pulled the eye of the catheter down into the lower third of the ureter and waited: no urine. I then injected a few drops of a sterilized saline solution, in order to clean the tiny lumen of the catheter which might have become clogged. As I had expected, a vehement renal colic was the result. But not a drop of urine appeared. I had to remove the catheter entirely, and now learned to my disgust that the tip of the catheter had bent a little at the eye, and that within the latter a small shred of coagulated blood had been caught. In spite of a perfectly successful catheterism of both ureters the whole procedure thus was, in part at least, a failure. I had the urine of the right kidney (probably the diseased one) only, and none from the left for comparison. The patient's condition did not admit of my introducing the cystoscope again and catheterizing the left ureter for a second time. Had I carried out what I had always done before and have advised above—viz., withdrawn the mandrel as soon as the eye of the catheter was well within the ureter, and had I then found out that the urine did not flow—I might very easily have changed the catheter, leaving the cystoscope *in situ*. If urine drops out of the catheter it is best collected in a small test tube, marked right or left according to the side which is catheterized. The average amount is from eight to ten cubic centimetres in about ten minutes. But the quantity may be materially smaller within that time.†

* Lately I have succeeded in catheterizing both ureters of a man whose bladder then held 650 c. c. (equal to a pint and a quarter). In another man I accomplished the purpose with 300 c. c. (equal to ten ounces) in the bladder. In both cases it was not so easy as in my other cases, where from five to seven ounces had been injected.

† It will be, I think, a good plan first to collect the urine discharged by the kidney presumably diseased. We are not always sure of being able to collect the urine of both kidneys in one sitting, especially in the male, if, for instance, the bladder is irritable.

‡ The thumb and index finger of the left hand must fix the catheter for this purpose in front of the outer opening of the channel; otherwise the catheter might be pulled out of the ureter.

* I have found it advisable not to save the very first drops. They often appear brown, or even red, on account of slight admixture with blood. In spite of very gentle handling, we shall not prevent injuring the delicate superficial layer of the epithelial cells of the ureter, and sometimes causing minute hæmorrhage. This, however, rapidly ceases. In two of my cases the flow of urine was not interrupted, according to the ureteral jets as seen through the cystoscope, and corresponding with the contractions of the ureter. It was almost continuous. In one patient, whose one (healthy) kidney discharged a hundred and fifty drops in four minutes, I had ordered a larger amount of fluid internally before the examination was performed.

† In such an instance either the kidney secretes less urine at the time, or we have to presume that not all the urine passes through the

It is of importance to know how much urine is absolutely needed for a scientific analysis of the same. According to Dr. Frederick E. Sondern, of this city, the gentleman who does all the examinations of urine for me in his laboratory, six cubic centimetres is the smallest quantity which permits of a thorough chemical and microscopical examination. Of course the centrifuge is here of the greatest value.

During the collection of the urine the cystoscope with the catheter may be left *in situ*. Then one will, of course, turn off the light and support the handle outside. If this is not wanted, the lid is withdrawn from the canal and the steel mandrel pushed into it, thus lifting the catheter out of its bed. In the female patient we may now, after extracting the mandrel, replace the lid and refill the bladder through the canal with the help of a syringe without removing the cystoscope, introduce another ureter catheter, and drain the opposite kidney; then remove the cystoscope and leave both catheters in place. In the male, especially in one who has a rather narrow urethra, this is not so easy. The cystoscope can not be turned well within the urethra if even a small catheter passes through it. Here we had better catheterize one side after the other—*i. e.*, either introduce the cystoscope twice, or refill the bladder through the canal after a sufficient amount of urine has been collected from the one kidney, and then catheterize the opposite side. This means leaving the cystoscope in the bladder for about twenty to twenty-five minutes. I have repeatedly satisfied myself that a bladder which is not irritable stands this very well.

I fear I have given you a rather lengthy description of the procedure. I have done so because I thought others might profit from the experience I have had thus far in practice. You may even have thought that the procedure was specially troublesome and time-robbing; but this is by no means the case. I can assure you it does not take so long to catheterize a ureter, in a suitable male patient, as it has just taken me to read this description. I purposely say in the male, because in the female it is still easier. The work itself is most interesting. Not in years have I felt such a real satisfaction as when I succeeded on October 25th for the first time in draining each kidney of a man separately, without any previous cutting operation. We can, of course, not expect success in every instance. We must be able:

1. To perform cystoscopy (and cystoscopy itself has its limitations).

2. To approach the mouth of the ureters.

It is often difficult to find the ureters, on account of their small size. Not unfrequently they are drawn aside by intravesical pathological changes, or they are covered by hypertrophied rugæ. The operator will, however, with increased dexterity and experience, find them in most instances. I can conscientiously state that I recollect only a few instances in my cystoscopic work of the last eight years where I searched in vain for the ureteral openings and jets of urine. I simply inspect the fundus of the bladder until I have found them. The internal urethral orifice, also the intra-ureteral bar, are important landmarks for this purpose. The intermittent protruding and receding of the region where the ureteral openings are situated is also a great help in finding them.

It may be of interest to add that the manipulations within the ureteral canal itself are void of special pain, a fact which is well known to those who do ureteral work according to Kelly's method. One can push the flexible catheter up to the renal pelvis. The patient has no more annoying sensations than a catheter produces that is introduced into the bladder. Casper found that if a non-irritant fluid was injected into the lower portion of the ureter, colicky pains set in; if, however, it was injected into the upper part with gentle pressure, one could safely irrigate the pelvis of the kidney. The patient then has hardly any pain. Casper professes to have cured two patients with ascending suppurative (gonorrhœal) pyelitis by repeatedly irrigating the pelvis of the kidney with a nitrate-of-silver solution.

In comparing this newest method of catheterizing the ureters with former useful ones, only Kelly's comes into consideration. I need not tell the members of this section of the great scientific and practical value of the same. Yet it can be applied in the female only. I am absolutely convinced that, with the help of straight metal tubes as necessarily used by Kelly, we shall never succeed in satisfactorily catheterizing the ureters of a number of male patients. In exceptional cases it may be feasible; but the method must be far inferior to the one just described. As stated above, the straight tube has also made Brenner's and Boisseau du Rocher's cystoscope a practical failure.

For ureteral work in the female I prefer Kelly's method. I do not like to say that it is easier, for there can not be anything simpler for a trained cystoscopist than to work successfully with Casper's instrument. I believe even that in cases where we fail with Kelly's method we may often succeed with Casper's. But Kelly's procedure gives more satisfaction to the surgeon, because it can actually be carried out aseptically. His instruments can all be sterilized. None of the cystoscopes can be boiled except the French one, and this, unluckily, is the least useful. We have, to satisfy ourselves, to disinfect the instrument according to *anti*septic rules, by carefully washing and irrigating and rubbing it after use with a five-per-cent. carbolic solution, and afterward with sterilized water, and immersing it in a five-per-cent. carbolic solution for an hour before trying it for the next patient. The small ureteral catheter, though, can be boiled a number of times without injuring it.

It is to be hoped that the cement which holds the prism in place in the cystoscopes built according to Nitze's principles, the only part which does not stand boiling, will in the future be prepared in such a way that it will answer this demand. This would naturally greatly increase the value

---

catheter, but that some runs alongside the same. In such a case it is advisable to move the catheter a little. Thus, a fold of the ureteral mucous membrane, which happened to occlude entirely or partially the eye of the catheter, will be pushed aside, or the latter drawn away from it. If after a while no urine appears at the outer end of the catheter, aspiration with a powerful syringe will often be found very useful. As mentioned above, the newest Berlin ureter catheters are funnel-shaped at the end—a great improvement, as it makes aspiration very easy.

of the instrument in a surgical sense, according to modern views. In considering this point we ought not to forget, however, that attempts at manufacturing flexible catheters that will stand sterilization by boiling are of very recent date and have been only partially successful. And flexible catheters have been used by doctors up to date without previous boiling, and, by a careful man, almost always without detriment to the patient. I can conscientiously state that I remember a very few cases only where prolonged cystoscopy produced an irritable bladder. Where it has happened, the bladder had always been the seat of an inflammation before. For the last four years I have always carefully washed the posterior urethra and the bladder once more immediately after cystoscopy, and let the patient take ten grains of quinine on reaching home. Since strictly adhering to this precaution I have not observed a single case of instrumental cystitis.

The construction of Casper's instrument has in this way at last really completed the diagnostic capability of the cystoscope from a mechanical standpoint. Catheterism of the ureters will now, in the male also, be an extremely important and never-to-be-omitted factor in cystoscopy for renal disease.

Thus, Mr. Chairman and gentlemen, we can to-day safely state it as a fact that the problem of conveniently catheterizing the ureters in the male, as well as in the female, without a previous cutting operation—in other words, the problem of the "bloodless, separate collection and analyzation of the secretion of each kidney in both sexes"—is now actually solved.

THE NOMENCLATURE OF NERVE CELLS.*

By FRANK BAKER, M. D.,
PROFESSOR OF ANATOMY, GEORGETOWN UNIVERSITY, WASHINGTON, D. C.

Ever since the discovery first adumbrated by Golgi and developed by Cajal, Retzius, Van Gehuchten, Kölliker, and others, that the nervous system is composed of co-ordinated units arranged in a somewhat definite manner, attempts have been made to find a suitable name for these units. This society has had the matter under consideration before—namely, at the session at Washington, in 1894, when Professor P. A. Fish presented a paper on the Terminology of the Nerve Cell, which was afterward published in the *Journal of Comparative Neurology.*

The following terms for the elementary unit have been proposed:

Neuron—Waldeyer, 1891 (1).

Neurone—Van Gehuchten, 1893 (2); citing Waldeyer, and evidently considering this the French equivalent of his term.

Neurodendron or neurodendrid—Kölliker, 1893 (3).

Neura—Rauber, 1894 (4).

Neurocyte—Fish, 1894 (5).

Schäfer (6) deprecates the use of a new term for this unit. He thinks it should merely be called a nerve cell, which, in fact, it is. This may be met with the statement that the term nerve cell has long been applied to the mutilated cell bodies that appear on our microscope slides, thus distinguishing them from their detached processes, the nerve fibres. There will, therefore, be a certain gain in lucidity if a new term is employed.

Waldeyer's term *neuron* has been objected to, first, because it has before been used for several other structures, and notably for the cerebro spinal axis; second, because it is etymologically incorrect, the Greek term ὁ *νευρών*, from which it is derived, necessarily meaning an assemblage or meeting point of nerve units.

It may be noted that it would have been more accurate if those anglicizing the term had spelled it, as Van Gehuchten and other French authors do, *neurone.*

Kölliker's terms have never attained any currency. They are clumsy and do not lend themselves well to combination. Besides, there are periods of embryonic life when the cell does not have an arborescent character, and the name would then be inapplicable.

Rauber's term, although very well in German, where it has the plural *Neuren,* is not satisfactory in English, as it has the form of a Latin plural and is likely to be mistaken for such.

Fish's term is an excellent one, and to be preferred to those used before him. Still, it does not readily lend itself to combination.

It has occurred to me that in English it would be much better for us to anglicize Rauber's term and simply call the element a *neure.* This would give a short single-word term of excellent euphony and of great ease of combination. In order to illustrate this, I will show how the nomenclature of the different classes of elements might be arranged by this means.

In the first place, we may divide all existing nerve cells into three categories, the first comprising those which collect sensations, the second those which distribute them to other neures, and the third those which finally affect the organ in which force becomes manifest. The first may be called *æsthesioneures* (7), the second *zygoneures* (8), the third *dynamoneures* (9).

The researches of Lenhossék upon *Lumbricus* (10) and of Retzius upon *Nereis* and the mollusca (11) show that in their primitive condition æsthesioneures are not collected in ganglia, but distributed throughout the epithelium. From this original scattered condition up to the ganglionic aggregations found in the higher vertebrates there is a regular gradation, the cells sinking deeper and deeper from the surface until they are finally collected in the neural crest. The original bipolar form still persists in the lower vertebrates, the unipolar form being a later development. The same gradation may be noted in different parts of the nervous system of man. In the olfactory region and the internal ganglionic layer of the retina the scattered arrangement of cells persists; upon the auditory nerve they are bipolar, though collected in ganglioform masses; in other ganglia they are unipolar, the primitive form in the fœtus being, however, bipolar.

In view of these facts, I am led to divide æsthesioneures into two subclasses, the first comprising those that

* Read before the Association of American Anatomists, at Philadelphia, December 27, 1895.

are scattered throughout the tissues and which I will term *sporadoneures* (12), the second those collected in ganglia, which I will term, after Minot, *ganglioneures* (13). This latter term might replace the term ganglioblast, proposed by Lenhossék (14), and æsthesioblast, proposed by me (15).

The term *zygoneure* should replace *commissural cell.* Zygoneures lie mostly within the cerebro spinal axis, some cells of the sympathetic system offering an exception. Those of the axis may be termed *axoneures* (16), and of these, the ones connecting closely contiguous areas, the "short-path" cells of Van Gehuchten (17), could properly be called *brachyneures* (18); others, connecting distant areas, the "long-path" cells (19), *teleneures* (20), for which term I am indebted to Professor Huntington. Cells of the so-called Golgi type, with short axis-cylinder processes, would necessarily be brachyneures. Zygoneures may also be divided into those connecting the same side of the cerebro-spinal axis, those connecting opposite sides, and those connecting with both the same and opposite sides. The systematic names of these would be, adapting for this purpose an etymology suggested by Van Gehuchten (21), *tautoneures* (22), *heteroneures* (23), and *hecateroneures* (24).

The term *dynamoneure* (for which I am indebted to Professor Ward) is applied to the terminal cells that produce action in organs whether muscles or glands [myoneures (25) or adenoneures (26)]. The motor cells of the anterior horn of the spinal cord and many cells of the peripheral plexuses of the sympathetic are of this class.

If it is urged that this classification is physiological rather than anatomical, I would point out that anatomical relations are in each case sufficient to determine the class. Æsthesioneures are essentially peripheral, presenting processes free or in contact with epithelial cells; zygoneures are central, passing from one neure to another; while dynamoneures pass from a neure to some non-nervous element.

Within this classification other groups may be formed should they be found desirable. Van Gehuchten speaks of *cellules radiculaires*, which form the nerve roots, and *cellules des cordons* (the *Strangzellen* of Lenhossék), which form by their processes the columns of the cord. These might be called *rhizoneures* (27) and *chordoneures* (28).

To recapitulate, I propose the following classification and terminology:

Neural elements = *neures*, divided into—

1. Collectors, or *æsthesioneures.*
   (*a*) Scattered cells or *sporadoneures.*
   (*b*) Cells collected in ganglia or *ganglioneures.*
2. Associators, or *zygoneures*, comprising—
   (*a*) "Short-path" cells, or *brachyneures.*
   (*b*) "Long-path" cells, or *teleneures.*
3. Dischargers, or *dynamoneures.*
   (*a*) Cells connected with muscles, *myoneures.*
   (*b*) Cells connected with glands, *adenoneures.*

Bibliography.

1. Waldeyer, W. Ueber einige neuere Forschungen im Gebiete der Anatomie des Centralnervensystems. *Deutsche medicinische Wochenschrift*, 1891, No. 44 *et seq.*

2. Van Gehuchten, A. *Le système nerveux de l'homme.* Lierre, 1893.

3. Kölliker, A. *Gewebelehre des Menschen*, vol. ii, Leipsic, 1893.

4. Rauber, August. *Anatomie des Menschen*, vol. ii, Leipsic, 1893.

5. Fish, P. A. The Terminology of the Nerve Cell. *Proc. of the Assoc. of Am. Anat.*, 1894.

6. Schäfer, E. A. The Nerve Cell Considered as the Basis of Neurology. *Brain*, pts. lxi and lxii, pp. 134–169.

7. αἴσθησις, perception.

8. ζῦγόν, a yoke, or bond.

9. δύναμις, power.

10. Lenhossék, Mich. v. Ursprung, Verlauf und Endigung der sensibeln Nervenfasern bei Lumbricus. *Archiv f. mikr. Anat.*, 1892, xxx.

11. Retzius, G. *Biologische Untersuchungen.* Neue Folge, v.

12. σποράς, -άδος, scattered.

13. γάγγλιον, a swelling under the skin.

14. Lenhossék, M. v. *Der feinere Bau des Nervensystems.* Berlin, 1893.

15. Baker, Frank. Recent Discoveries in the Nervous System. *New York Medical Journal*, June 17 and 24, 1893.

16. ἄξων, an axis.

17. *Cellules des voies courtes.*

18. βραχύς, short.

19. *Cellules des voies longues.*

20. τῆλε, far.

21. *Op. cit.*, pp. 209, 210.

22. ταυτό, the same.

23. ἕτερος, the other.

24. ἑκάτερος, each of two.

25. μῦς, μῦός, a muscle.

26. ἀδήν, a gland.

27. ῥίζα, a root.

28. χορδή, a string.

ON THE IMPORTANCE OF TECHNICAL INSTRUCTION IN OUR MEDICAL COLLEGE LABORATORIES.*

By A. P. OHLMACHER, M. D.,

CLEVELAND, OHIO,
PROFESSOR OF PATHOLOGY AND BACTERIOLOGY,
MEDICAL DEPARTMENT, UNIVERSITY OF WOOSTER.

The laboratory may be compared to an ideal workshop. Its equipment furnishes the tools, its students are the workmen, and the teacher becomes the foreman. A workshop is useless without tools—a laboratory is useless without equipment. A workshop with but a single set of tools for a number of workmen would not be regarded as an economical institution, and similarly a laboratory without equipment for its individual workers does not afford the best facilities for work. In a model workshop each workman has a workbench furnished with all the tools necessary for the performance of a given piece of work. In a model laboratory each student should have a separate desk and equipment for his individual use. Specialization in many of the industrial occupations has arrived at a stage

* Prepared for the special committee meeting of the Association of American Medical Colleges held in Chicago, February 15, 17, and 18, 1896.

in which a workman often employs his whole time on a certain kind of work; but the best workman in a special line is he whose general manual training has been broadest. The same tendency to specialization is seen in laboratory work, and here the most successful specialist is the one whose preliminary training has been broadest.

The foundation of a skillful workman's education lies in his manual training. He must be an expert in the use of the tools of his trade, be these the hands Nature has given him or the hands provided by man's ingenuity. His education begins tools in hand and progresses as practice makes him proficient in the use of these implements. He can not learn his trade from treatises upon it, nor from lectures upon it, nor from watching the work of other workmen. Individual manual practice must come first; then the treatise, the lecture, and the demonstration become useful. The moral, as applied to the laboratory student, is self-evident.

It may now be interesting to inquire how far the methods of the workshop have found their way into laboratory education as offered by our medical schools.

The principal instrument of the modern medical laboratory is the microscope. It is to the laboratory worker what the lathe is to the machinist, or the clay to the sculptor, or the piano to the pianist. In itself it is a pretty toy, of little more value than the formless clay in the hands of an untrained workman. It becomes a thing of life and of great practical utility only when its possessor has been educated in its use. A physician's proficiency in the use of the microscope may then be taken as an index of his laboratory training. Measured by this standard we find the results disappointing.

The majority of physicians in the United States who possess microscopes are unable to satisfactorily employ them even in their routine daily work. Inquiry will reveal the fact that this difficulty is almost entirely due to lack of familiarity with the methods of microscopic laboratory work. This is certainly suggestive in its reflection upon the educational methods practised in medical-college laboratories, and especially so since it will be found that many young and enthusiastic men, recently graduated in medicine, are included in this category.

Of the various studies presented by the laboratory method in our American medical schools at present, chemistry certainly takes precedence in the perfection of its instruction. This is largely due, no doubt, to the greater length of time that this subject has occupied the attention of teachers. In laboratory chemistry the workshop idea has long been a prominent feature. To some extent, also, this applies to practical human anatomy as it has been taught for many years. In both of these studies the student is supplied with worktable, tools, and material for the work which he individually prosecutes.

In the more recently introduced medical laboratory studies, like histology, physiology, bacteriology, and pathology, all grades of variation from the ideal pedagogical method are to be found, and as these subjects are comparatively new in the curriculum of the medical college, and since the opinions of teachers differ widely as to the best methods of presenting them, my further discussion will be confined to them.

The true educational object of the medical school is to prepare its students to become independent, self-reliant practitioners of the medical and surgical art. The object of its laboratory instruction ought to be to prepare its students for independent work in the branches of knowledge taught therein. This object is only partially accomplished, at best, in histology, physiology, bacteriology, and pathology as they are now taught in most medical schools, and I believe the fault lies largely in lack of technical training. In most institutions in which laboratory study in these branches is prosecuted, the preparatory technical work is done for the student by his teacher or by an assistant, and this practice I regard as the fatal stumbling-block in the way of good laboratory instruction. The student receives the more or less completely finished product of another's handiwork, and he fails to gain a practical individual familiarity with laboratory methods. He often carries away with him a number of specimens of some one else's laboratory work, and sometimes also he goes so far as to make a set of drawings in normal and pathological histology. He is about as well prepared for independent work as the cook's apprentice would be who attempted to learn the art of cooking from eating his master's products at the dining-room table. This, the "ready-cooked" method of laboratory teaching, prevails to a large extent in every medical college in this country, and, like some other bad things, has its origin in continental Europe, where poorly fed and underpaid *Dieners* do the technical drudgery for the classes of students. The day may come when the practical portion of laboratory studies will all be done by specialists; but this day, like the one in which the surgical diagnostician will be independent of the specialist who does the drudgery of cutting, has not yet dawned upon us.

I believed that the student in histology, for example, will have a clearer conception of the subject, and will be better fitted for actual work, after carrying out all the steps in the preparation of even rough sections of the organs of a freshly killed frog than if he studied many beautiful sections of tissue from various animals prepared for him by his teacher. And in pathology the working up of the raw material from one necropsy is of more ultimate benefit to the student than an examination of dozens of ready-prepared pretty sections illustrating various lesions in pathological histology. In bacteriology also, the very essence of independent work lies in a working familiarity with laboratory methods. Such illustrative specimens as microscopic sections have their place in laboratory teaching, it is true; but their place is only a step higher than the illustrations and descriptions in text books. In themselves they form a very poor basis for the students' future practical work, and it is a matter of regret to find so many laboratory teachers exclusively employing such incomplete, partial methods in their teaching. Drawing is also a fundamental method of object teaching and has its legitimate place in laboratory instruction along with laboratory notes. Illustrative specimens, notes, and drawings can not, however, make a well-rounded laboratory course without manual practice. Com-

bine the three — technical training, written and graphic record, and illustrative specimens—and we have the means for presenting an ideal laboratory course.

A partially successful attempt to carry out the foregoing ideas in laboratory teaching in the medical school has given me some useful data. It will be impossible to enter into details at this time, though the very keynote of success often lies in a mastery of apparently insignificant details. I shall therefore direct your attention to some general aspects of the subject.

In carrying the workshop methods into the teaching of such subjects as histology, physiology, pathology, and bacteriology, the furniture and equipment of the laboratories deserve first attention. As far as possible each student should be supplied with the material which will make for him a miniature working laboratory. This means, of course, an individual desk, and an outfit of instruments and reagents stored in a suitable locker. The student's working outfit should be of the simplest possible kind, both for economical reasons and because of the lesson it impresses that a great part of the routine laboratory work can be done with simple and inexpensive apparatus. Here the ingenuity of the teacher comes into play, and it should be the object of the laboratory worker, like the surgeon, to do the greatest possible amount of work with the fewest possible instruments. By this I do not mean that crude methods of work should be taught, for I believe thoroughly in encouraging the student to master the refinements of laboratory technique; but even the best methods can be carried out with simple tools.

The furnishing of several laboratories of this character will demand a considerable outlay of money at the outset, but it must be remembered that the college is not equipping one laboratory, but twenty-five laboratories, or fifty laboratories, depending on the size of the class of students to be accommodated. However, by careful attention to businesslike methods in supplying material to the students, a laboratory can be made self-sustaining. The student will not be expected to pay for the laboratory furniture of a stationary character, but he may be expected to pay for the supplies of material furnished to him.

As an example of the workings of a system of this kind I may point to the experience of the school which I represent, which expended three thousand dollars last year for the initial equipment of students' laboratories in comparative anatomy, embryology, histology, bacteriology, and pathology, and for the partial equipment of the chemical laboratory. The laboratories were furnished for a working class of twenty students in a section, and this sum of money covered the outlay for twenty Leitz microscopes with Abbé condensers, six students' microtomes, four Thoma-Zeiss hæmocytometers, three Fleischl hæmometers; reagents and apparatus for making up students' outfits, including even such items as dissecting instruments, slides, and cover-glasses, drawing and note paper, drawing pencils; together with the equipment of a teacher's private laboratory for pathology and bacteriology. About fifteen hundred dollars more was spent for laboratory desks, plumbing, gas-fitting, remodeling of rooms, shelving, etc. Eighty students availed themselves of the opportunities afforded by these laboratories, and from these students eight hundred dollars was received for material consumed. This year we added seven hundred dollars' worth of additional material to our supply rooms, and our stock is now sufficient to supply classes of the present size for several years with but a small annual outlay for additional material. From my personal knowledge I know this is essentially the experience in the College of Physicians and Surgeons of Chicago, in which laboratories were fitted out on this plan four years ago, though on a much larger scale than in our institution. Like a well-conducted mercantile enterprise, a laboratory projected on business principles need not become a burden on the school adopting it. The student, as consumer, pays for the material consumed, leaving the standing investment in stationary laboratory furniture the only real outlay.

The methods of instruction in the laboratory will naturally vary according to the individual ideas of the teacher, and here, of course, no fixed rules can be laid down, though certain fundamental principles are established by pedagogic experience. Like the foreman in the workshop, the teacher of a practical laboratory course should be merely a guide or overseer. One of my friends, whose abilities as a laboratory teacher I highly esteem, compares the teacher to the magnet under the paper covered with iron filings, whose influence is felt and not seen. Many teachers do so much work for their classes that the students become mere hollow echoes instead of real living beings. Others attempt to instruct by holding chastising penalties over the awe-struck student, instead of winning his co-operation by exciting a natural interest in a subject. It is hard to resist driving dull or careless students, but after all a student who obtains his knowledge by having it stuffed down him becomes very like an overdistended sausage filled with all kinds of indigestible meats.

The material for a certain laboratory lesson should be provided, the task set, brief directions given, and the prosecution of details should be left with the individual student. Inflexible rules should not be laid down about the work of a student, but his individuality should rather be encouraged. It is often surprising to find how widely students differ in the routes by which they arrive at a common result—much like the originality shown by certain students in solving mathematical problems. Careful attention to technical details must, of course, be emphasized in some instances, for we all know how much often depends upon the care with which we follow the rules of our empirical laboratory technics.

Both for stimulating methodical habits of observation and for his future reference, the student should be required to produce careful laboratory notes and drawings. To encourage the powers of observation it is imperative that the student be supplied with laboratory manuals that contain only technical directions and suggest the lines of study without furnishing the notes and illustrations. Very few laboratory manuals in the market meet this demand in the subjects taught in medical schools, and it will usually be found preferable to supply the student with a mimeographic

or typewritten syllabus containing directions for the exercise in hand. I believe the ideal model for such laboratory exercises as have been indicated will be found in the laboratory directions which appear in that incomparable and epoch making little work by Huxley and Martin on *Practical Elementary Biology*.

Both for purposes of technical instruction and for meeting the logical indication, a certain sequence ought to be observed in presenting the various laboratory studies. For students who have not had a previous biological laboratory training, practical study of a few simple types of animals and plants should introduce the laboratory work. Elementary vertebrate anatomy studied by the careful dissection of two or three types should follow, and later still the study of embryology. Elementary histology and elementary physiology also find their place in the first year's work, largely in connection with the foregoing branches. No student ought to be admitted to the study of practical human anatomy who has not completed the laboratory work in vertebrate anatomy, or its equivalent. Advanced physiology and histology come in the second year's course, along with bacteriology, which naturally precedes the study of practical pathology. Chemistry is, of course, included among the fundamental laboratory studies, though its exact position in the course is hard to fix.

Even with the best possible instruction in these various laboratory branches, which are usually completed in the first two years of the medical college course, the student's knowledge is gradually lost unless he can constantly apply it, and this suggests the necessity for laboratory facilities for third and fourth year students, in which they can, by the aid of the training previously received, apply their laboratory knowledge to clinical purposes. This means that a laboratory should be set aside for students pursuing clinical studies in which they can work up the material obtained from the bedside, and thus make easy the next step in which, upon graduation, the student will purchase his microscope and simple laboratory equipment and apply his laboratory knowledge in his private practice. The evolution of the original investigator from such material as this will be a natural consequence.

A CASE OF ASPHYXIA FROM FÆCAL VOMITING DURING THE ADMINISTRATION OF ETHER.*

By CHARLES PHELPS, M. D.

The case itself was one of simple strangulated inguinal hernia. The sac was neither very large nor very tense, but the initiatory general symptoms had been severe. Pain for twenty-four hours was intense, with vomiting of everything taken into the stomach, which prevented medication. After admission to St. Vincent's Hospital, at the end of that time, pain was so much lessened, and vomiting having ceased, with no urgent local symptoms, that operation was deferred at the patient's request. Fæcal vomiting began the same evening, and on the following day the operation was begun. Ether was administered, and relaxation and unconsciousness followed in the ordinary course. The sac had been dissected when the patient vomited a considerable amount of thin fæcal matter; respiration ceased instantaneously without a gasp even, and was never resumed. Every usual method of resuscitation was employed, and tracheotomy done without delay, as it was evident from the first instant that any other resort was hopeless. The first expiration after the insertion of the tube was accompanied by free discharge of thin fæcal matter, and as this had not followed incision of the trachea, it seemed probable that it was extruded from a greater depth. A necropsy was not permitted.

The moral of this accident is obvious. I have knowledge of another case in which asphyxiation followed the intrusion of fæcal matter into the respiratory tract during etherization. I have since operated in a case of strangulated hernia in which general anæsthesia seemed a necessity, and I believe it can not always be avoided, but if fæcal vomiting has occurred, such an experience as I have detailed is sufficient to give pause to any operator who is tempted to resort to general in place of local anæsthesia, even if it necessitates stopping at simple relief of strangulation in place of radical cure.

* Read before the Society of Alumni of Bellevue Hospital, January 8, 1896.

PISTOL-SHOT WOUND OF THE SECOND AND THIRD CERVICAL VERTEBRÆ.*

By CHARLES PHELPS, M. D.

The subject, a man thirty-five years of age, was shot in a street altercation, and the bullet, of ·32 calibre, entered the tongue at the tip, made exit at its base on the same side, and secondarily entered the posterior wall of the pharynx just to the left of the epiglottis. He was shortly afterward admitted to St. Vincent's Hospital. His tongue at that time, and till within a day or two of his death, was so greatly swollen as to prevent exploration of the pharyngeal wound, which was known to exist only from the statement of a medical man who examined him previous to his admission. He had great pain in the back of his neck extending toward the shoulder on the left side. His articulation was difficult, respiration labored, and deglutition painful. His temperature was 99°, pulse 80, and respiration 18.

Aside from the functional difficulties connected with the swelling of the tongue and adjacent parts, which subsided on the fifth day, and continued pain and a sensation of stiffness in the back of his neck without rigidity, his subsequent symptoms were purely those of a general septic infection. His temperature was high from the second day, when it rose to 104·8°, and his pulse and respiration were frequent. The temperature, with the exception of the sixth day, when it did not exceed 100°, varied each day from 101°+ or 102° to 104°+, and on the seventh and eighth days rose to 105°+. Its daily irregularities were somewhat increased by the use of alcohol baths. Intense hæmatogenous jaundice was developed from the fifth day, and on the tenth day stupor was fol-

* Read before the Society of Alumni of Bellevue Hospital, January 8, 1896.

lowed by slight delirium, with intervals of mental lucidity and of tremor, and death.

On necropsic examination the subpharyngeal connective tissue was found to be gangrenous from the site of the wound, for a finger's breadth, as far as the inferior border of the larynx. The bullet was lodged between the second and third cervical vertebræ at the base of the transverse processes, both of which were fractured. The spinal membranes were uninjured, but they had been transuded by the gases of decomposition, which had penetrated the cranial cavity and given it a fœtid odor, and stained the external border of the left cerebellar lobe through the cortex a distinct slate color. The brain was hyperæmic and moderately œdematous, and there was moderate subarachnoid serous effusion.

The liver was of normal size and consistence, and like the other viscera deeply yellow.

THROMBOSIS OF THE POPLITEAL AND TIBIAL ARTERIES.*

By CHARLES PHELPS, M. D.

The patient, a man, forty-three years of age, was admitted to Bellevue Hospital suffering from alcoholic delirium, and having what was described as a discolored ankle. He was transferred to a surgical ward twenty-two days later, after recovery from the maniacal attack. The right leg was then painful, and a considerable area over the anterior aspect of the foot and ankle was anæsthetic and greenish-blue in color. There were similar patches of discoloration upon the leg, the largest upon its inner aspect, and others of redness. The temperature of the limb was maintained. Neither of the popliteal arteries could be felt, but the temporal and radial arteries were rigid. The right radial pulse was regular and fairly distinct, but the left could not be detected. The heart was moderately hypertrophied, but without valvular lesion. His mental faculties were too much confused to permit him to give any intelligible account of himself prior to admission. He had no knowledge of having suffered injury, and was quite certain there was nothing wrong with his foot. In the four days following there was no great change in the appearance of the limb. The temperature ranged from 101·6° to 102·7°, and the pulse at the right wrist was 100, and its strength maintained by free stimulation. Amputation was then done through the upper part of the lower third of the thigh by Dr. Whitener, house surgeon of the Fourth Division. With the exception of a sloughing of a finger's breadth of the extremity of both flaps, recovery was unattended with any unfavorable symptoms. At the present time (six weeks after operation) the wound has healed, and the patient's condition is in every way satisfactory.

The specimen exhibited includes the lower femoral, the popliteal, and the beginning of the two tibial arteries in continuity. The terminal half inch of the femoral artery, the whole popliteal, and the section of the anterior tibial shown are solidified by a hard, decolorized coagulum. The anterior tibial was occluded even lower than the point of section, and again in its lower portion; the posterior tibial below its first two inches was pervious throughout; the femoral was rigid at the site of amputation. The popliteal space afforded no evidence of former traumatism.

* Read before the Society of Alumni of Bellevue Hospital, January 8, 1896.

OSTEOSARCOMA OF THE TIBIA.*

By CHARLES PHELPS, M. D.

This specimen is from a man, fifty-four years of age, admitted to Bellevue Hospital with a transverse fracture of the upper third of the right tibia, which was said to have been spontaneous. His own statement, however, would seem to indicate appreciable violence. He is a switchman by occupation and stumbled and fell among the railway tracks, and if, as is not certain, the fracture occurred before he struck the ground, his foot was probably caught between the rails. The whole length of the tibia was found to be much enlarged and curved, with an anterior convexity, the soft parts not being involved in the morbid process. His history included two ordinary injuries from striking the shin, fifteen and ten years ago, which kept him from his work a few days each time. Two years ago he sprained his right ankle and was seven weeks in hospital, and at this time noticed that his leg was bowed. Even six months earlier than this, other people noticed a limp in his gait of which he was not himself conscious. During the past two months the limb has been growing painful and stiff, though he continued to follow his occupation, and gained rather than lost in flesh. He was inclined to attribute the deformity, which had much increased, to the fact that as a railway worker he had always in jumping from the cars struck first upon his right foot. Amputation was performed in the third week through the lower third of the thigh by Dr. Whitener, house surgeon. Primary union of the wound followed.

The laboratory examination of the specimen undertaken by Dr. Dunham has not yet been completed, but it has been ascertained to be a sarcoma of the round-celled variety. It will be noted that a new osseous growth, yet soft, surrounds the bone at the site of amputation.

FISTULA IN ANO

IN REFERENCE TO THE INTEGRITY OF THE RECTUM AFTER OPERATION.*

By JOHN BLAIR GIBBS, M. D.

Notwithstanding the fact that fistula in ano has been described and discussed from all points of view for many years, and, acknowledging the subject to be essentially trite and perhaps tiresome, there are certain points of interest of sufficient importance to justify the time required for their proper consideration by this society.

Confining myself to the limits suggested by the title of this paper, it is right to discard at the outset all discussion of such cases as are either too trivial and simple to waste thought upon, or else, on the other hand, but complications of other lesions too grave to allow of any attempt at cure —notably incurable local conditions, such as extensive ulceration and stricture of the rectum, either cancerous or non-malignant, as well as general tuberculous disease so advanced as to render the local trouble of comparative insignificance. Neither do I think we are concerned with the ætiology and pathology of ischio-rectal abscess, except to apply here our knowledge of suppurative processes, as

* Read before the Society of Alumni of Bellevue Hospital, January 8, 1896.

in any other region where injury and subsequent infection are probable.

In considering the cases in which I have operated myself primarily, in addition to those that have come to me after passing through the hands of other surgeons, I see instances where the operator has failed by going to one extreme or the other, and with resulting mortification.

Given any case of fistula prepared for operation, the first necessity of treatment is to cut wide enough and to follow up each and every tract so thoroughly as to cure the patient, while the second and weightier consideration is to avoid incising so deeply or imprudently as to leave the ultimate condition worse than the first.

It is an annoyance, after an operation and several weeks in bed on the part of the patient, to find out that, for want of sufficient care in following all the ramifications of the various centres, a fistulous tract still remains, and that the operation has to be done over again. But infinitely more embarrassing is it to accomplish an entire cure of all inlying and outlying sinuses at the expense of the functional integrity of the rectum, with all its offensive consequences. The avoidance of fæcal incontinence is the issue upon which this paper is intended to provoke discussion to night. In many cases of fistula and abscess the real difficulty occurs actually in the examining room. The impossibility of making a diagnosis must be admitted, or, more properly speaking, the impossibility of determining with certainty the position and extent of every sinus, and the amount of dissection necessary to expose the entire seat of disease. External openings and internal openings may be found, external tracts of suppuration and internal ones may be felt or probed, but until the subject is on the table it is not possible for any one to prove the actual relations of healthy to diseased tissue in their entirety, and then only with knife and director. The duration of the affec tion does not always show its extent, nor does the degree to which the visible parts are involved more than suggest the actual ravages that have taken place. At times very extensive undermining of the skin with several openings may overlie but a single and superficial opening into the gut, while on the other hand a small granulation on the anal margin may lead into a cavity as high as the prostate gland or the promontory of the sacrum.

As a corollary to the foregoing remarks, it must be admitted that few operations require a calmer or more deliberate judgment, or a judgment less independent of enlarging experience.

The two purse-string muscles guarding the outlet of the alimentary canal, with their delicate inhibitory co-ordination, will tolerate a certain amount of mutilation with a fair promise of recovery, but how to express the exact extent of cutting that can be done with impunity is by no means easy. There are, however, certain rules that can be laid down with a reasonable degree of safety in regard to direction, length, depth, and number of incisions, speaking strictly in reference to the necessary divisions of the external and internal sphincters in following up sinuous tracts, and totally disregarding any amount of dissections on the outside skin and connective tissue. The direction of the incision through the muscular coats of the bowel is first in importance.

A few paragraphs back the statement appears that an accurate diagnosis of fistula in ano can only be properly made in the course of the dissection. For example, suppose a case of typical horseshoe fistula, with three or four openings irregularly surrounding the anus. The initial operative step is to open up the various subcutaneous sinuses that must exist, all of which cutting is but the first stage of the examination, and has nothing to do with the muscular guard of the rectum itself. Having laid open all external sinuses, search for the fistula is made and the exact diagnosis ascertained. Section of the two sphincters should be, when possible, in the median line fore or aft. As a matter of fact, the incision will be, as a rule, posterior. Without exception, every severing of the sphincters should be in the axis of the bowel, but never oblique.

Any lateral, diagonal section of the sphincters is most dangerous, generally resulting in ruin to the action of the cut muscles, because the severed ends seldom are susceptible of accurate approximation, without considering the liability of destroying the nerve supply of the injured side.

The depth of the incision, as shown by the thickness of tissue between the fistula and the lumen of the gut, has a direct bearing upon subsequent continence or incontinence. A simple section of the walls of the intestine rapidly repairs itself, but when it is necessary to divide an inch or more of connective tissue, cutting deep into the ischio rectal fossa, the normal function of the anus is certainly jeopardized. When healing is secured, the cicatricial splice will be found broad and depressed, with the ends of the muscular fibres far apart.

The depression of the scar leaves the aperture not round and even, as in the natural condition, but so irregular that closure is impossible and leakage the consequence.

The number of incisions depends, of course, on how many branches of the fistula lead into the rectum. It is sufficient to say on this point that, other things being equal, if one complete division involves risk, two or three are but additional dangers. When one considers that the ultimate integrity of the organ depends upon the direction, the depth, and the number of incisions that may be required, it is apparent that the preservation of its normal and perfect function is not always a physical possibility, yet it should never be forgotten that much irreparable injury may be avoided by not disregarding well-established rules of experience.

I have carefully avoided the use of the terms "partial control" and "complete control" of the sphincters as indicating degrees of comparative efficiency of these muscles. It may be an extreme statement, but from the standpoint of the patient partial control signifies nothing more nor less than fæcal incontinence.

The expression is frequently used in cases where the entire lower bowel has been destroyed by disease or by amputation for carcinoma, and, what seems almost preposterous, even in colotomized patients, whose only intestinal outlet is an artificial opening through the abdominal wall.

The true test of continence or incontinence comes to

the patient when suffering from looseness of the bowels, and then partial control means none at all. After an attack of diarrhœa or a dose of salts but two degrees of comparison remain.

In the present days of asepticism and supposed surgical perfection it may seem strange that I have so far only referred to methods known and taught fifty years ago, and still practised by the general surgical world in the treatment of fistula in ano. One would think that the modern technics, as applied so successfully to other plastic surgery, could be here employed with the utmost confidence. Yet, even to-day, most surgeons still adhere to the crude ideas abandoned by them in other operative work.

As a matter of fact, various attempts have been made by many men to radically change the old-fashioned surgery of the rectum, and especially in the cases we are now considering. I am one of those who are compelled to confess a majority of failures. The difficulties are not theoretical but practical. When we learn how to cut freely into the rectum, dissect out diseased tissues, and close up the wounds without danger of subsequent infection and suppuration, fæcal incontinence, as a term of reproach, will have lost its terrors.

If one could feel sure of immediate union without infection, it would make no difference whether incisions were long, deep, or numerous, because a great injury could be repaired as readily as a small one.

In studying recent literature, many reports are available, giving individual cases where aseptic principles have been satisfactorily employed, each one of which is a step in the right direction and places ultimate success nearer if still far off. The reasons of failure are, in my mind, twofold.

1. The uncertainty of starting with an aseptic wound. It is a simple matter to lay open a small, superficial, straight tract, and after thorough cleansing obtain immediate union; but in an old fistula with many branches, running under the skin and up around the intestine as high as the finger can reach, with pockets and ramifications difficult to find even in themselves, and all surrounded with thickened new-formed connective tissue, the operation is one that offers many chances of failure.

2. The immense difficulty of preserving aseptic conditions long enough to allow of firm, hard union in an organ which has to be functionally active, and is at the same time eliminating septic material.

Speaking with all due conservatism, it is in the minor cases, where promptness of recovery is the thing to be struggled for, that plastic surgery can be relied on to-day. It is in the grave cases, where the solvency of the rectum is the all important consideration, that our want of capacity shows itself.

All of these somewhat disconnected remarks are presented to this society with the hope of bringing out an expression of opinion from the individual experience of members, and with a particular desire to ascertain how far the general consensus of opinion will disagree with mine, especially in regard to that portion of this paper which has to do with up-to-date asepticism in the surgical treatment of fistula.

RECURRENT OBLITERATIVE APPENDICITIS

WITH PERFORATION AND ULTIMATE ABSCESS FORMATION.*

OPERATION BY THEODOR KOCHER, M. D.,

BERNE, SWITZERLAND.

By RUSSELL BELLAMY, M. D.

It is with the kind permission of my friend Professor Kocher, of Berne, that I report this interesting case and rather exceptional and unique procedure of operating for appendicitis with abscess:

Previous History.—L. F., an English gentleman, thirty-nine years of age, six feet tall, weight one hundred and eighty-five pounds, and of splendid physique; in earlier days had been a prominent athlete, but for the past few years had been a good liver, with a tendency toward gout. Eleven years ago he had a distinct attack of so-called abdominal colic, accompanied by slight nausea and vomiting, followed by constipation. The patient remembers having suffered pain, which was of a general character; the attack lasted for a short time, and was treated with castor oil and hot fomentations. Three years afterward he had a similar attack, but less severe. Two years following, one evening he left dinner with very severe pain in the right iliac region and the right umbilical region, which was supposed to have been due to eating salad. This illness was accompanied by fever, considerable depression, and marked constipation. He was confined to the house for four or five days. Three years ago he had a distinct attack resembling the previous ones, but of much greater severity. In this instance the pain was of a general character, but at times very lancinating, confining him to bed for several days. Treatment consisted of counter-irritation over the abdomen and the administration of laxatives.

Present History.—When I first saw the patient at Ragatz, in Switzerland, on July 28, 1895, he was walking slowly in a semi-stooping position, and from his facial expression I judged him to be suffering severe pain. I knew him socially, both of us being guests of an American, living together in the same hotel. The next day at breakfast and dinner his abdominal pain was so intense that he was compelled to leave the table. On the day following his friends asked me to examine him, stating that on the previous day he had consulted the hotel physician, and been treated with nux vomica and cascara for gastritis and indigestion. Knowing this, naturally I declined to take the case.

On the 30th our party left for Lucerne. On the trip I advised the patient to remain quiet and to forego eating a Swiss ham sandwich. On our arriving at Lucerne, the family pressed me to examine the patient. On my questioning him, he stated that a week before, in London, he had had a very severe attack of cramps in the right side of the abdomen; the temperature was 102° F.; he had been very weak and had been in bed; was treated with castor oil, and the usual treatment was carried out for influenza and gastritis; but four days after his first symptoms he was well enough to undertake a twenty-two hours' journey to Ragatz, Switzerland.

Physical Examination.—My attention naturally being directed to the abdomen, I found that the peritoneal cavity was somewhat distended, mildly tympanitic, and distinctly raised in the iliac region. Palpation revealed a distinct prominence to the right of the umbilicus, and marked pain on pressure over McBurney's point, the patient's attention being diverted

* Read before the Society of Alumni of Bellevue Hospital, January 8, 1896.

when the alternating pressure was made. Percussion verified the preceding signs, and showed distinct dullness over an area of nearly the size of an ordinary fist. The patient was now suffering considerable pain, especially in the region of the umbilicus. The temperature, when taken in the evening, was 101·8°, the pulse 104, somewhat hard and tense, and the respiration 26. Hot stupes were applied to the abdomen, and a small dose of castor oil was ordered, but they were soon followed by the free administration of opium. As I had decided positively that the case was one of appendicitis with abscess, and that an operation was absolutely necessary, the family requested me to take the patient to his surgeon, Mr. Jonathan Hutchinson. After waiting a few hours, I stated emphatically that the patient could not stand a trip to London, notwithstanding the fact that a hospital car had been engaged. I then decided to telegraph for Professor Kocher. He responded and confirmed my diagnosis. All necessary preparations were made at the Hotel National, the services of two American nurses from St. Paul's Training School at Rome having been secured. Chloroform was administered, and the operation was begun on July 31st, at 11 A. M.

The incision was made in the usual line, the peritonæum retracted, a large fluctuating abscess was found involving the appendix and cæcum, and extending well down on the psoas tendon. Professor Kocher now called my attention to one of the most interesting features of the case: the complete absence of omental and mesenteric adhesions, leaving the abscess in direct contact with the peritoneal cavity. The operator then said: "The patient's condition is good, and we must not attempt to remove the appendix or open the abscess when such intimacy exists between an abscess and the peritoneal cavity as we have here; but we will introduce a large piece of iodoform gauze, carrying it as low down as possible, thereby setting up strong adhesions and establishing an artificial wall."

This done, the edge of the wound was turned in, thereby keeping the incision partially open. The patient was returned to bed and left in my charge. Remembering that I had a case of delicate temperament, similar to that of an American, I decided positively to carry out the same diet and subsequent treatment for laparotomies as that used by Dr. Polk and Dr. Barrows in Bellevue Hospital. On the fourth day after the operation the temperature rose to its highest—100·9°. The patient complained of feeling something give way in the abdomen and was somewhat weak. Subsequently it was found that the abscess had ruptured and was drained well by the iodoform gauze. The next day enemas were given and the bowels moved freely.

On August 7th preparations were made for the second laparotomy. Chloroform being administered, the wound was quickly opened; the mesentery and omentum had formed distinct adhesions, and the greatly thickened and enlarged appendix was broken from its adhesions on the psoas muscle with great difficulty. I might mention that I have never seen such strong adhesions. The appendix was tied off with catgut, and on examination was found to have three cicatrices of perforations, one of apparently recent origin. A few adhesions were similarly ligated. A large strip of iodoform gauze was carried well down into the cavity, and the wound dressed with sterilized gauze. With the exception of two sinuses, which I succeeded in closing only after using sterilized balsam of Peru, which seems to me to be an ideal remedy for hastening granulations, recovery was uneventful.

Four weeks after the operation I took the patient to the north of England. A letter received two weeks ago states that his health is excellent, with the exception of slight nervousness, which might be termed mild neurasthenia, which, on conversing with several prominent abdominal surgeons, among them my friend Dr. C. C. Barrows, I find to be a rather common sequel to operations for appendicitis.

Remarks.—1. There is a wonderful power of resistance shown by some patients to repeated attacks of appendicitis.

2. The method of establishing adhesions of the mesentery and omentum in cases of appendicitis with abscess when in direct contact with the general peritoneal cavity seems unique.

3. If we can judge by this case, and Professor Kocher assures me that this is the method he has pursued in similar cases, little shock attends the double operation, septicopyæmia is not observed, as is shown in this case by the low temperature (100 9°), there is absence of sweats and marked depression, and the liability to general peritonitis is comparatively nil.

4. If we are able to judge anything by one case, sterilized balsam of Peru is a good remedy for treating indolent sinuses.

5. My observations have proved that quite often the operation for appendicitis is followed by nervousness or neurasthenic manifestations; consequently the convalescence should be especially guarded.

A CUTANEOUS OUTBREAK
PRESUMABLY DUE TO THE
INGESTION OF ACETATE OF POTASSIUM.

By J. ABBOTT CANTRELL, M. D.,

PROFESSOR OF DISEASES OF THE SKIN IN THE PHILADELPHIA POLYCLINIC AND COLLEGE FOR GRADUATES IN MEDICINE; DERMATOLOGIST TO THE PHILADELPHIA HOSPITAL, THE FREDERICK DOUGLASS MEMORIAL HOSPITAL, AND THE SOUTHERN DISPENSARY, PHILADELPHIA.

Cutaneous manifestations due to the ingestion of some medicinal agent have proved of such widespread importance at the present day in the practice of dermatology that the present author deems it worthy of attention to record an instance of an unusual outbreak which was presumably due to the ingestion of the acetate of potassium taken for an intercurrent malady.

Nowhere in the literature of the subject of drug eruptions, not in the masterly writings of Van Harlingen (Medicinal Eruptions, *Archives of Dermatology*, New York, October, 1880, p. 337), nor in those of Morrow (Drug Eruptions, *Selected Monographs on Dermatology*, New Sydenham Society, 1893, pp. 355–568), could the writer of the present paper find any reference to any cutaneous disorder following the internal administration of the above remedy.

The writer did not arrive at these conclusions hastily, but only after repeated outbreaks, after applying the test, did he feel the truthfulness of this assertion. It was at first believed to be only an unusual manifestation of an eczema, but after carefully studying the field and making test after test did I arrive at the foregoing statements. It did not resemble to any extent any eruption of the skin, but presented characters of several diseases of that organ.

The case is recorded that it may be verified by other observations of a similar character should they present themselves.

October 7, 1895.—A man, aged sixty-eight years, born in Ireland, but has been a resident of Philadelphia for the past fifty years. He has always enjoyed the best of health with the exception of occasional attacks of rheumatism, which he thought was possibly due to his occupation. At each of these rheumatic attacks he was given remedies by the same physician and he had never seen such an occurrence as will be referred to later. At this visit, among other remedies he was ordered to take twenty grains of acetate of potassium every three hours during his waking period. This remedy was continued without any deleterious effect being noticed until December 2d, when he complained of an eruption on the right arm. The notes taken at this time are as follows: There are a number of peculiar aggregated lesions on the anterior surface and inner aspect of the right arm about its middle third; the entire patch, which is made up of scattered lesions (in groups), with healthy areas intervening, has a diameter of five inches in all directions. The lesions at first sight resembled a herpes zoster, but differed from it in its peculiar distribution. The lesions are superficial with an apparent thickening to the sight but not to the touch. They are of four days' duration and have evidently been papules, while to-day they show evidences of being tipped with vesicles, the contents of which have become absorbed rather than rupturing, leaving upon each of the lesions the deadened epithelium. At points this epithelium has been rubbed off and shows a reddish inflamed spot, while in other places, by passing a needle through the dried epithelium, no contents were discernible. The whole patch is made up of discrete and aggregated lesions. Around the discrete points we have a distinct reddish areola. At points where the lesions are aggregated and closely packed the redness seems to spread over a considerable area, and resembles the inflammatory condition as found in zoster. The drug was discontinued.

December 4th.—The right arm has made no change since last visit. The left arm shows an erythematous condition on the outer side from the elbow to about three inches from the shoulder. The lesions are maculæ with considerable patches of intervening healthy tissue. Through this patch some of the lesions have the tendency to form papules. They do not show the vesicularlike condition as marked in the other arm.

6th.—The left arm and forearm are swollen, especially the lower two thirds of the arm and upper two thirds of the forearm, the lower border being marked with a distinct cordlike line of demarcation.

9th.—The left arm is almost well, but shows a little scaling at this time. The patches formerly referred to upon the right arm and forearm do not show the same amount of inflammation as was noticed at first notes, although there seems to be a passive inflammation at this time, and the peculiar lesions which were mentioned have seemingly been moist since last visit and show some crusting. On the posterior and outer lateral sides of the right arm and forearm, to the same extent as mentioned on the left arm and forearm, I saw an erythematous condition which gave the impression of a purpura. The arm and forearm are profusely swollen, but not œdematous. Through the entire patch the condition, while showing some tendency to the formation of papules, does not entirely convey that impression, although on the outer edge this seems apparent. Throughout the patch it seems rough and thick. The condition appeared a few days ago. At points on the borders may be seen the same peculiar vesicles as mentioned in former notes. These vesicles do not contain any fluid. The appearance resembles to a great extent the condition as seen in papular eczema, where the lesions have aggregated. At the elbow it measured two inches more in circumference than its opposite fellow. It shows a peculiar reddened aspect. The parts as a whole resemble the appearance as seen in teleangeiectasis, although, upon passing the hand over it, it seems to be slightly roughened.

11th.—The appearances, as noted in last notes, have apparently resolved themselves into those of an eczema. The swelling as well as the peculiar condition noted has disappeared. Potassium acetate was ordered to be given again in the same dosage.

25th.—The disease shows the same appearances as were noted in first notes and in a similar locality. The use of the drug was discontinued until the condition disappeared.

31st.—The drug was again prescribed in same doses.

January 20, 1896.—The same appearances have again supervened.

After the foregoing experiments the writer has no hesitancy in saying that the eruption was undoubtedly produced by the ingestion of the acetate of potassium, but, feeling that he should like a corroboration of the facts, he has given this account of it for what it is worth.

LAMINECTOMY

FOR FRACTURE OF THE TENTH AND DISLOCATION OF THE ELEVENTH DORSAL VERTEBRÆ.

By CLIFF LINDSEY, M. D.,
SURGEON TO FERGUS COUNTY HOSPITAL, LEWISTOWN, MONT.

Patient, William A., aged thirty-nine years, gives the following history: He was stacking hay in July, 1893, using a harpoon hayfork, when the two poles which held up one end of the cable on which the fork ran fell, striking him across the back in the lower dorsal region. They were green pine poles thirty feet long. He was knocked down and was unconscious for nearly three hours, and when he regained consciousness he was unable to move or feel anything in either leg. He subsequently found that he had no control over either bladder or rectum. He was brought into the County Hospital and treated by the surgeon then in charge, who diagnosticated fracture of the tenth dorsal vertebra.

I first saw him in January, 1894, or about six months after the accident. Very little had been done for him, no effort having been made to correct the deformity, not even making extension and putting a plaster cast on him up to the time I was called to see him. On examination I found the following symptoms: Complete loss of motion and sensation in both lower extremities, extending above the crests of the ilia, taking in all the region supplied by the lumbar and sacral nerves. He had no control over either bladder or rectum, could not be turned over in bed without being rolled in a sheet, and every movement causing quite a good deal of pain in the region of the fracture. There were four large bedsores over the sacral region. A considerable amount of gas would accumulate in the intestines, which would cause him to have colicky pains in the abdomen until it was passed off. There was quite a severe cystitis, the urine being loaded with phosphates and pus; it also contained some albumin and blood. The skin was dry but not branny on the lower ex-

remities. He complained of severe pain at times at the seat f the fracture, but at no other place. The toe-nails grew ut very little, if any, after the accident, and the bedsores howed but slight tendency to heal.

Treatment.—I immediately put him in a plaster cast exending from his shoulders to his hips, using Sayre's extenion apparatus. I washed out the bladder every day with an ntiseptic solution; also used electricity, employing a dry chloide-of-silver cell battery, as high as seventy-five cells on him; lso strychnine in conjunction with the electricity. I con· inued putting on the casts, applying a new one every three r four weeks.

In four weeks he could walk around the ward with the id of two crutches, and at the end of six weeks could walk ll about with a cane. After that the improvement, while steady, was slower than at first, until the 1st of March, 1895, when he again proposed an operation, I having previously advised him not to have one, owing to the length of time elapsing since the accident. I again urged him not to be operated on, but he insisted that he could not consent to remain in the condition he was then in while there was a possible chance of being cured by an operation; for when the cast was removed he was in about as helpless a condition as when he first received the hurt.

I at last consented to operate on him, which was done on March 16, 1895. Placing him on two tables of an equal height, I proceeded with the operation. There was some difficulty in getting him under the ether, owing to the vomiting, and it took nearly half an hour. I then made an incision five inches long directly over the spinous processes, and nipped off the spinous processes of the ninth, tenth, eleventh, and twelfth dorsal vertebræ with a rongeur forceps, then dissecting off the deep attachments of the muscles with a periosteotome. I readily found the fracture and removed the small spicula of bone; but owing to the adhesions it was difficult to reduce the dislocation, yet I succeeded after nearly half an hour's work. I then stopped the hæmorrhage by packing the wound with warm compresses of gauze. The venous oozing was quite severe from the bone. The cut was then closed up by a deep row of catgut sutures, and the outside with silkworm gut. Closing up all the cut without drainage, I dressed it with a large quantity of iodoform gauze and absorbent cotton (sterilized), then separated the tables, and, making extension, put on a good heavy plaster cast extending from his neck to his hips.

He rallied well from the immediate effects of the operation, and had very little pain. A catheter was kept in the bladder all the time. Everything progressed well, his temperature never reaching 99·2° at any time until the 19th, when he had a uræmic convulsion, and during the day and night vomited about twenty times. On the 20th he had two more convulsions, and no urine was passed after the morning of the 21st, at 3 A. M. He was vomiting every fifteen or twenty minutes during the night of the 20th and the morning of the 21st, and was lying in a semi-comatose condition all the time. On the night of the 20th he had two convulsions, and on the morning of the 21st three more, and he died in the last one at 11 A. M.

Conclusions.—I have no doubt that, if proper treatment either by operating or plaster jackets had been adopted at the time of the accident, he would have made a perfect recovery. I examined the seat of operation afterward and found everything in fine shape, no pus and the vertebræ in place.

A CASE OF
URETERO-ABDOMINAL FISTULA AFTER CŒLIOTOMY.*

By JOHN O. POLAK, M. D.,
INSTRUCTOR IN CLINICAL OBSTETRICS AT THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND THE LONG ISLAND COLLEGE HOSPITAL, BROOKLYN; GYNÆCOLOGIST TO THE EASTERN DISTRICT HOSPITAL.

Mrs. McC. was referred to my clinic in November, 1894. The patient was thirty-three years old, born in Ireland, a widow, and the mother of four children, the youngest being but nineteen months old.

The labors were without instrumental interference, no fever followed, and she remained in bed ten days. No miscarriages.

She reached puberty at fifteen, after which the menstrual flow recurred regularly every four weeks, lasting from three to four days, and accompanied with severe dysmenorrhœa. Since the last pregnancy the menses have been scanty, dark and clotted in appearance, but have recurred with all their former regularity.

While nursing her last baby she had no evidence of menstruation, save a slight show occurring every other week. Since May, 1894, the patient has complained of a pain in the right iliac region, which was intensified by walking. About the middle of July she noticed an abdominal enlargement which was at first attributed to bloat, but was soon seen to be progressive and more marked upon the right side. Severe vesical disturbance led her to seek medical aid.

Abdominal examination revealed a large mass, hard, nodular, and movable, displacing the intestines upward. The tumor was fixed in the right iliac region and reached to within an inch of the ensiform cartilage. There was free fluid in the peritoneal cavity. On bimanual examination, the uterus was found to be freely movable without moving the tumor; it was displaced downward and to the left; the left ovary was normal, but the right could not be isolated. The cavity of the uterus measured but three inches, and the cervix was torn bilaterally. The tumor rested on the brim of the pelvis and could be moved as one solid mass entirely distinct from the uterus. A diagnosis of right multilocular ovarian cystoma was made and an operation advised.

After a month of general supportive treatment, the patient entered the hospital on December 19th and was prepared for cœliotomy in the usual manner. On December 21st a section three inches and a half in length was made in the median line below the umbilicus, allowing five quarts of free serum to escape from the peritoneal sac, followed by profuse bleeding, probably leakage from the unsupported veins, and the incision was rapidly enlarged to six inches and a half, exposing a large multilocular cystoma of the right ovary. Dense adhesions between the bladder and the cyst wall prevented easy eventration of the tumor. While these bands were being separated the vesico-uterine fold of the peritonæum was torn, causing very troublesome hæmorrhage. After the extraction of the tumor through the abdominal incision the pedicle was ligated close to its base with heavy silk and the growth cut away. The bleeding continued from the denuded peritoneal surfaces near the bladder, the torn edges were brought together with a continuous fine silk suture, and the abdomen was flushed with a normal salt solution, which was hurriedly

* Read before the Section in Obstetrics of the New York Academy of Medicine, October 24, 1895.

pumped out and a drain of iodoform gauze inserted through Douglas's *cul-de-sac*. The abdominal incision was then closed by deep silkworm-gut sutures and dressed in the usual manner. Time of operation, fifty minutes; the patient reacted well under heat, stimulants, and morphine. Convalescence was interrupted by a diminution in the secretion of urine during the first ninety-six hours, the quantity passed in twenty-four hours amounting to less than seven ounces. This partial suppression may be attributed to the prolonged etherization or, more probably, to accidental poisoning by digitalis, as the patient, through an error of the nurse's, received sixty-two minims of the fluid extract in eighty hours. The pulse dropped to forty a minute, and was intermittent, accompanied by vomiting, diarrhœa, and headache. At no time until the tenth day, when the abdominal sutures were removed, did the temperature rise above 100·5°. Union *per primam*. For the next two days the temperature ranged from 101° to 103°. Abdominal palpation showed a right inguinal swelling, the upper border of which reached a line drawn from the umbilicus to the anterior superior spine of the ilium, and bimanual palpation elicited fluctuation.

Under ether anæsthesia, an incision was made along the outer border of the right rectus muscle, evacuating a pint of stinking pus; the cavity was washed out and drained with a Mikulicz bag. The temperature immediately fell to normal and the patient's condition began to improve. But it was noticed that the amount of drainage was out of all proportion to the size of the cavity, and that the fluid drained had a urinous odor, while the quantity of urine passed by the bladder was markedly reduced, and a uretero-abdominal fistula was demonstrated with methylene blue and by direct exploration of the right ureter. Owing to an intercurrent pneumonia contracted by lying in a wet bed, nothing radical was done toward closing the fistula. Thirty-five days after the primary operation, the heavy silk ligature used to tie off the pedicle passed through the abdominal fistula. Spontaneous closure of the ureteral opening occurred during the following week. When the patient was seen by the writer, only a few weeks ago, there still remained a small fistula in the abdominal wall at the site of the inguinal incision, through which the patient menstruated regularly every twenty-eight days. Evidently the right cornu of the uterus communicates directly with the fistulous tract.

Apropos of Woman's Limitations as a Doctor, the late Dr. W. C. Van Bibber, of Baltimore, used to tell this story. Awakened late one night by a ring at his bell, he called down the speaking-tube to know who it was. "It's I, doctor, Mr. ——. I want you to come at once to my wife. She is in labor." "Yes, but I don't attend your family. Why don't you go for your own physician?" And back came the reply: "I did, doctor; but she's about to be confined herself."—*Boston Medical and Surgical Journal.*

The New York Academy of Medicine.—The announcement card of the last meeting of the Section in General Medicine, held on Tuesday evening, the 17th inst., mentioned as the special order a paper on Acute Bronchitis, by Dr. William H. Thomson. The subject for the April meeting will be The Treatment of Pulmonary Tuberculosis, and that of the May meeting, Intestinal Fermentation.

The New York Celtic Medical Society.—At the regular monthly meeting, on Thursday evening, the 26th inst., Dr. John Aspell will read a paper on The Treatment of Puerperal Septicæmia. There will be a presentation of cases, and instruments and specimens will be exhibited.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co.
Edited by Frank P. Foster, M.D.

NEW YORK, SATURDAY, MARCH 21, 1896.

THE CAUSE OF THE PREPONDERANCE OF DORSO-ANTERIOR POSITIONS OF THE FŒTUS.

In the *British Medical Journal* for February 29th, Professor Murdoch Cameron, of the Glasgow University, states that his experience in performing the Cæsarean operation has shown him that with the left occipito-anterior position of the fœtus the placenta will be found on the posterior wall of the uterus and somewhat to the right side, that with the right occipito-anterior position it will be found posteriorly and somewhat to the left, that with the right occipito-posterior position it will be found anteriorly and somewhat to the left, and that with the left occipito-posterior position it will be found in front and somewhat to the right, and so on with the various other positions. In other words, the child faces the placenta. This arrangement, says Professor Cameron, is favorable to the child, for its back can be applied to the uterine wall with advantage during a pain, whereas, if the placenta intervened, asphyxia would result, especially if the membranes had ruptured. He thinks also that in cases of scantiness of the liquor amnii, but for this wise arrangement of the uterine contents, the circulation in the placenta might be interfered with, even before the onset of labor. Professor Cameron quotes a statement of Osiander's to the effect that the ovum, on entering the uterus, will find little space, and will consequently attach itself near the Falloppian tube on the fundus or on the side of the uterus. This does not, however, explain why it oftenest becomes attached posteriorly.

If Professor Cameron's observation is well founded, it follows that posterior implantations of the placenta are in inverse ratio of frequency to dorso-posterior positions of the child. What, then, is the relative frequency of the various positions? If statistics on this point are based on vaginal examinations, says Professor Cameron, the results may vary with the progress of the head; examinations made early in labor might be set down as revealing an occipito-posterior position, while in the same cases examinations made after rotation had taken place would perhaps be interpreted as indicating an occipito-anterior position. Therefore, to settle the question, a large number of examinations made early in labor are required. Professor Cameron states the relative frequency as follows: Left occipito-anterior, sixty-seven per cent.; right occipito-anterior, ten per cent.; right occipito-posterior, twenty per cent.; left occipito-posterior, three per cent. Accordingly, in Cæsarean operations, he has found the placenta situated posteriorly in seventy-seven per cent. of the cases, and anteriorly in twenty-three per cent.

These observations seem to us likely to prove of value in practice. If, for example, a right dorso-posterior position of the fœtus is made out and the Cæsarean operation has to be resorted to, the operator is warranted in inferring that the placenta is attached anteriorly and to the left, and consequently that by incising the uterus on its right side he may avoid the site of the placental implantation, and thus give the child the benefit of the organ's physiological action to the last, as well as reduce the amount of blood lost. Then, too, if the placenta has to be expressed after the expulsion of the fœtus by the natural forces, some modification of the manual procedure may possibly be suggested by a knowledge of the situation of the placenta.

QUINOSOL AND THE CRAZE FOR NEW ANTISEPTICS.

In the *Journal* for January 25th we gave a short summary of Professor Kossmann's very favorable observations regarding the use of quinosol as an antiseptic, published in a recent number of the *Centralblatt für Gynäkologie*. Now, in the *Centralblatt* for February 29th, Ahlfeld and Vahle report their discouraging experiments concerning the efficiency of the drug as an antiseptic. Even a solution of the strength of three per cent. they have found not altogether to be relied on. Moreover, they state that it is not so innocent as Kossmann supposed it was. A sturdy rabbit was made sick by a subcutaneous injection of three grains of quinosol; its urine was of a dusky-brown color, but it did not die. Larger doses, however, proved fatal. One animal died in eighteen hours after having received a subcutaneous injection of eight grains; its blood was found to be blackish-red, and there was a decided dusky coloration of its organs, especially the kidneys.

In the same number of the *Centralblatt*, Dr. E. Witte, of Berlin, treats of quinosol and makes some wholesome remarks about the quest for new antiseptics. In corrosive sublimate, in carbolic acid, and in lysol, he says, we have tried antiseptics; years of observation have taught us the bright and the shady side of their action. The case for quinosol, he holds, has by no means been made out. As to Kossmann's experience in the employment of the drug for a number of months without the occurrence of a single case of infection from a wound or any appearance of poisoning whatever, even so slight as eczema, he doubts if these results are to be ascribed to the quinosol. His own, he says, have been quite as good when he used only a sterile physiological solution of common salt. Furthermore, he argues, even if it is true that traumatic cavities, suppurating and yielding a fœtid secretion, may be favorably affected by quinosol, the fact is of little consequence, for the thing to do is to remove the putrefying masses and use drainage, and it makes no difference whether this or that antiseptic is employed, or, indeed, only sterile water. Germs that have penetrated into the tissue, he remarks, can not be destroyed by disinfection unless the tissue is destroyed at the same time, but those that are on the surface may be got rid of mechanically by irrigation with antiseptic as well as aseptic liquids.

Dr. Witte then takes up Kossmann and Ostermann's statement that quinosol, even in substance, is in no wise irritating to wounds. His own experience has been to the contrary. In two instances he has applied quinosol in substance to the cavities left after the removal of glands, and each time such intense burning pain set in that the patient begged to have it taken out. Although he himself has not observed symptoms of poisoning from quinosol, he insists that we can not be sure they will not occur, and this is true also of iodoform, creolin, lysol, and other drugs the drawbacks of which do not come to light at first. A minor objection to quinosol is the fact that it stains the skin and the instruments, but the stain can be removed without much trouble.

Quinosol is particularly unsuitable for vaginal irrigation during labor, says Dr. Witte, for it is highly astringent, so that it would rob the vagina of its lubricity and make it rough and unyielding, as corrosive sublimate does. Finally, as to teaching midwives to rely on disinfection of their hands with quinosol or any other drug, to the neglect of thorough scrubbing with soap and water and the use of the nailbrush, that would be teaching them to trust to correction rather than to prevention.

CONVULSIVE ATTACKS CHARACTERIZED BY LAUGHTER.

At a recent meeting of the Vienna Verein für Psychiatrie und Neurologie, Dr. Infeld related an interesting case, and showed the patient. The report, published in the *Wiener klinische Wochenschrift* for March 5th, includes Dr. Infeld's own abstract of his communication. The patient was a man, thirty years old, who for about three years had been subject to convulsive seizures characterized by laughter. When he was fifteen years old he had been injured by the explosion of a dynamite cartridge, but the injuries do not appear to have been serious. At about the same time his father had died, and this fact had been the occasion of lasting cares. In 1888 and 1889 he had frequently indulged in alcohol to excess, but after that he had become more and more intolerant of alcohol. In March, 1893, he had had difficulty in using his right leg, but this had soon disappeared, and had not been accompanied by other disturbances. He had headache at times, but never dizziness or vomiting. Toward the end of the month he had had his first laughing spasm. It was not until November that the next one had occurred, but after that he had two or three in a month, and they grew more and more frequent until he had as many as sixteen in a day. Under treatment with bromides, in September, 1895, they had been reduced to two or three, which occurred almost always at night, but again they increased in frequency so that from the 19th to the 30th of January he had from ten to nineteen attacks daily, for the most part early in the morning. Arsenic and valerian were given without result. In the intervals he was perfectly well and clear in his mind.

There was a sort of aura, consisting of a feeling of formication, which arose from the toes of the left foot. As soon as the sensation reached the level of the nipple, after the lapse of perhaps two seconds, he lost consciousness. Then tonic contractions set in, first in the lower limbs, with decided dorsal flexion of the foot and toes, extension of the knee, slight lifting of the thigh, and then, with great inclination of the head, which was often twisted to the right, slight adduction and abduction of the arm, flexion and convulsive pronation and supination of the forearm, flexion of the wrist, and extension of the fingers. All these features were more decided and began sooner on the left side than on the right. The mouth and the eyes were closed convulsively, and the eyeballs were turned upward. When the pupils could be examined they were found widely dilated and insensible to light. At the acme of the convulsion he would begin to laugh, at first in a mimicking sort of way, then loudly, but not in a manner suggestive of merriment. The whole paroxysm lasted not more than two minutes.

The man's psychical condition was not at all that of hysteria, and the absence of mental impairment seemed to forbid the diagnosis of epilepsy, but the effect of the bromide treatment had been remarkable. In the discussion it was suggested that there might be in this case a commingling of epileptic and hysterical elements, an epileptic attack serving to evoke an hysterical delirium—the sort of mixture of the two morbid conditions assumed by Gowers. The state of the pupils, it was remarked by Dr. Krafft-Ebing, seemed to favor the theory of the epileptic nature of the attacks.

MINOR PARAGRAPHS.

PROFESSIONAL CRAMP AND BRIGHT'S DISEASE.

At a recent meeting of the *Société de biologie*, a report of which is published in the *Progrès médical* for February 29th, M. Bonnier stated he had found that professional cramp was a symptom which might indicate the presence of Bright's disease. He related the case of a telegraph operator in whom writer's cramp had appeared associated with symptoms of interstitial nephritis and had disappeared at the same time with these symptoms under the influence of a milk diet. No other treatment had been efficacious.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending March 17, 1896:

DISEASES.	Week ending Mar. 10.		Week ending Mar. 17.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	10	2	10	1
Scarlet fever	127	11	138	5
Cerebro-spinal meningitis	0	0	4	5
Measles	481	24	511	28
Diphtheria	214	39	200	33
Small-pox	0	0	0	0
Tuberculosis	100	108	90	129

The New York Physicians' Mutual Aid Association.—The *Twenty-seventh Annual Report*, which has just reached us, shows a gratifying amount of beneficent work done by the association during the year and a continuance of its excellence of management.

The University Medical College, of Kansas City, held its commencement exercises on Thursday evening, the 19th inst. The programme included an annual address, by Governor Stone.

Change of Address.—Dr. James E. Kelly, to No. 117 East Fifty-ninth Street, New York.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from March 1 to March 14, 1896:*

Munday, Benjamin, Captain and Assistant Surgeon. The leave of absence on surgeon's certificate of disability granted him is extended two months on account of sickness.

White, Robert H., Major and Surgeon. Is granted leave of absence for one month, to take effect upon his relief from duty at Jefferson Barracks, Missouri.

The following-named officers of the Medical Department are relieved from duty in Washington, to take effect upon the completion of the present course of instruction at the Army Medical School, and are assigned to duty at the following-named stations:

Fauntleroy, Powell C., First Lieutenant and Assistant Surgeon, Fort Riley, Kansas.

Kirkpatrick, Thomas J., First Lieutenant and Assistant Surgeon, Fort Columbus, N. Y., for temporary duty.

Rand, Irving W., First Lieutenant and Assistant Surgeon, Fort Apache, Arizona.

Stone, John H., First Lieutenant and Assistant Surgeon, Fort Leavenworth, Kansas.

Wilson, James S., First Lieutenant and Assistant Surgeon, Madison Barracks, New York, for temporary duty.

Corson, Joseph K., Major and Surgeon, Fort D. A. Russell, Wyoming. The leave of absence granted for seven days is extended twenty-three days.

Society Meetings for the Coming Week:

Monday, *March 23d:* Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore Medical Association.

Tuesday, *March 24th:* New York Dermatological Society (private); Metropolitan Medical Society, New York (private); Medical Society of the County of Lewis, N. Y. (quarterly); Buffalo Obstetrical Society.

Wednesday, *March 25th:* New York Academy of Medicine (Section in Laryngology and Rhinology); New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Medical Society of the County of Albany, N. Y.; Philadelphia County Medical Society.

Thursday, *March 26th:* New York Academy of Medicine (Section in Obstetrics and Gynæcology); New York Orthopædic Society; New York Celtic Medical Society (private); Brooklyn Pathological Society; Roxbury, Mass., Society for Medical Improvement (private); Pathological Society of Philadelphia.

Friday, *March 27th:* New York Clinical Society (private); New York Society of German Physicians; Yorkville Medi-

cal Association, New York (private); Philadelphia Clinical Society; Philadelphia Laryngological Society; Cleveland Medical Society.

SATURDAY, *March 28th:* New York Medical and Surgical Society (private).

Births, Marriages, and Deaths

Born.

CAMPBELL.—In Elk Grove, Cal., on Thursday, February 20th, to Dr. and Mrs. P. C. Campbell, a daughter.

PETERSON.—In New York, on Thursday, February 13th, to Dr. and Mrs. Frederick Peterson, a daughter.

Married.

YAHR—SCHORSE.—In Milwaukee, on Wednesday, March 11th, Mr. Eugene Yahr and Miss Marie Schorse, daughter of Dr. William Schorse.

Died.

MANDEVILLE.—In Brooklyn, on Monday, March 9th, Dr. Dorrance Kirtland Mandeville, in the sixty-eighth year of his age.

MCLEAN.—In Brooklyn, on Saturday, March 14th, Mrs. Catherine V. Maher McLean, wife of Dr. Henry C. McLean.

MCLEAN.—In Alameda, Cal., on Tuesday, March 3d, Mrs. Mary E. McLean, wife of Dr. John T. McLean.

NOCK.—In Concordia Parish, La., on Sunday, March 8th, Dr. William J. Nock, of Fort Adams, Miss.

SMALL.—In Sedalia, Mo., on Tuesday, March 10th, Dr. Andrew V. Small, aged seventy-five years.

Letters to the Editor.

ABDOMINAL SECTION PERFORMED SUCCESSFULLY ON AN INFANT.

NEW YORK, *February 28, 1896.*

To the Editor of the New York Medical Journal:

SIR: Quite recently, at the Post-graduate Hospital, I operated in a case of acute intussusception in a child aged *three months.* The caput coli was presenting at the anus, and the symptoms had existed only twenty-four hours. A laparotomy was done, the tumor was reduced, and an uninterrupted recovery followed. The case is only remarkable from the fact of recovery from such an operation in so young a child.

I have corresponded with Mr. Frederick Treves, of London, on the subject, and he writes me as follows:

"The statistics in my book, to which you are good enough to allude, are very much out of date now. More recent figures give thirty-four cases, bowel reduced, twelve recoveries; thirty-nine cases, bowel not reducible, one recovery; total, seventy-three cases, thirteen recoveries.

"I can not at this moment recall a case of successful operation in a child of three months or under. The mortality must be exceedingly high, and I think it very probable that your case may stand alone."

If any of your readers know of any similar result in a child of such age I am sure it would be of interest to the surgical world to have a record of it, and it is in the hope of calling out any such result of operation that I venture to address the *Journal.* CHARLES B. KELSEY, M. D.

THE MAYBRICK CASE.

To the Editor of the New York Medical Journal:

SIR: You have already inserted some letters relative to the Maybrick case, but its interest for the American public as well as for the medical profession generally may excuse another. The English Home Office, it may be presumed, obtained some medical opinions on the subject, but, as no one outside of the Home Office knows who these medical gentlemen were, how far the facts of the case were laid before them, or the exact opinions which they gave, we must of course disregard that part of the question.

According to the case for the prosecutors, Mr. Maybrick's illness was throughout the result of arsenical poisoning and began on April 27, 1889. It is true that their medical witnesses admitted that the symptoms on this day and for several days afterward afforded no decisive indication of arsenic. They relied, as regarded this part of the illness, chiefly on two circumstances: First, that a very short time before April 27th Mrs. Maybrick had purchased a dozen fly papers and soaked them in water to extract the arsenic, and, secondly, that arsenic was found in the dregs of a bottle of medicine made up on April 24th and which ceased to be used about the 28th, there being no arsenic in the prescription. But if it should clearly appear that this illness was not due to arsenic, the fly papers and medicine bottle go by the board and the whole case for the prosecution is much weakened.

It appears from the evidence that on the morning of the 27th Mr. Maybrick vomited and appeared for some time in great pain. But, finding himself better, he afterward started on horseback to see the Wirral Races, some miles off. It was known that he ascribed this illness to an overdose of medicine, but at the trial it did not clearly appear what this medicine was. It has since been found that on the way to the races he met Mr. and Mrs. Morden Rigg, who were friends of his, and told them that he had taken an overdose of strychnine. The bottle in the dregs of which arsenic was found contained an aperient and did not contain any strychnine, so that it was not of that bottle that he took an overdose. Mr. Maybrick had been in the habit of taking both strychnine and arsenic and was well acquainted with the symptoms of both. He further told the Riggs that his limbs were quite rigid. Mrs. Maybrick, it ought to be mentioned, had informed the nursemaid, Alice Zapp, on this morning that her husband had taken strychnine and was very ill. This Alice Zapp swore to at the magisterial inquiry, but did not mention at the trial. Mr. Thompson, who saw him at the races, swore that he seemed scarce able to sit on his horse. He went to dine at the house of a friend near the racecourse, and after dinner his hand trembled so much that he spilled the wine and was apprehensive of being thought drunk. Two other facts may be mentioned with respect to this day. He took no solid food and he got wet through and did not take off his wet clothes until he reached home, late at night. He then felt very ill, but his chief complaint seems to have been of rigidity of the limbs. There seems to be no doubt that he wrote to this effect to his brother on the 29th, though the letter was not produced at any stage of the proceedings—not the only important document that has been kept back. The doctor was first sent for on the morning of the 28th. He then complained most of pain and oppression in the chest and region of the heart. He ascribed it to a cup of strong tea. Before the doctor arrived Mrs. Maybrick had given him an emetic of mustard and water. She was heard saying to him that it would remove the brandy at all events, whence it may be con-

cluded that he had been taking brandy and felt worse after it. He complained of constipation. Dr. Humphreys ordered prussic acid and papain-iridin. The patient became better, but in the evening the doctor was again sent for owing to the stiffness of his limbs. This the patient ascribed to strychnine or nux vomica, which he said had similarly affected him before. Dr. Humphreys thought much of the stiffness was imaginary, but he discontinued a tonic containing nux vomica which had been recently prescribed by another doctor. It may be presumed that he also discontinued the aperient in the dregs of which arsenic was afterward found, relying on the papain-iridin for that purpose. On the next day Mr. Maybrick gave him a more detailed account of his symptoms. The doctor considered him a chronic dyspeptic and prescribed a dietary. He had been suffering for a long time from headache and a foul tongue (accompanied by sweet breath), with occasional numbness, apprehension of paralysis, etc.

Mr. Maybrick returned to his business at his office and there was no change of any consequence until May 3d. There is some evidence, though not very conclusive, that he continued to take strychnine. On the other hand, there were traces of arsenic in the remains of some food that he took at his office in Liverpool. On the 3d of May, after returning from his office, he vomited twice (apparently for the first time after April 28th), but did not send for the doctor. Late at night, however, he was sent for, as the patient was suffering from severe pains in the thighs, extending down to the knees. After trying turpentine Dr. Humphreys used a morphine suppository. On the 4th nothing but a little water would rest on his stomach. Dr. Humphreys ascribed this to the morphine, but the other Crown medical witnesses regarded it as evidence of arsenical poisoning. There was no diarrhœa before the 7th or 8th, and no pain in the eyes or in the calves of the legs at any stage, nor does there appear to have been pain in the pit of the stomach. The vomiting continued on the 5th, though not so badly. It was aggravated in the afternoon by the unauthorized administration of brandy and soda water by Mr. Edwin Maybrick. He retained this, however, for half an hour before vomiting. On the 6th the patient was better, and during the day he was again able to take some solid food. On this day Dr. Humphreys administered some arsenic and thought the effect beneficial. At night he put a blister on the epigastrium, which seemed to stop the vomiting altogether. Previously he had tried ipecacuanha wine, prussic acid, and arsenic. However, on the 7th, Mrs. Maybrick called in a second doctor—Carter. Both doctors were hopeful, though Dr. Carter stated in his evidence that diarrhœa was beginning to appear. At midday on the 8th the trained nurses were called in, and Mrs. Maybrick had no opportunity of administering anything afterward. Dr. Humphreys thought him no worse on this day, but all others who saw him appear to have been of the contrary opinion. Dr. Carter, however, was not called in. On the 9th there was diarrhœa with tenesmus, and both doctors for the first time suspected poisoning, but it seems that they did not do so until Mr. Michael Maybrick made the charge against his sister-in-law. Dr. Humphreys examined the fæces and urine and found no trace of arsenic. It was afterward alleged that he did not boil the fæces long enough. The urine was undoubtedly boiled. A flannel shirt which Mr. Maybrick ceased to wear about this time likewise afforded no trace of arsenic. Strychnine does not seem to have been looked for, arsenic being what was suspected, owing to Mrs. Maybrick's purchase of the fly papers.

The principal remedy resorted to by the doctors on May 9th was bismuth in double doses. They were still hopeful, notwithstanding their suspicions of arsenical poisoning. On the 10th the diarrhœa and tenesmus were reduced. The patient had vomited twice during the night, but apparently did not do so again before his death. He was very weak on this day, and symptoms of cardiac failure were evident. The doctors apprehended danger, and at his second visit, in the evening, Dr. Humphreys came to the conclusion that the patient would die. He suggested having his affairs settled, but it seems that Mr. Maybrick was much annoyed about some document that was brought to him to sign, and was heard crying out in a loud voice, notwithstanding his weakness. Delirium also set in on this day. On the 11th his condition was hopeless. He could take no nourishment, and died late in the evening. Throughout his illness—at least after he took to his bed on the night of the 3d—he complained much of his throat and was very restless. His tongue continued filthy throughout. Not long before his death sulphonal was tried in order to induce sleep, but, it would seem, with little effect. The cause of death was admittedly exhaustion.

The post-mortem appearances were those of gastro-enteritis, but it was admitted by all that they were not, when taken alone, sufficient to indicate the cause of the disease.

There is clear evidence that the man was an habitual arsenic eater and in possession of arsenic. No arsenic was found in the contents of the body. The internal organs were equally free from it, with the exception of the liver, kidneys, and intestines. Dr. Stevenson estimated the entire amount in the liver at one third of a grain of white arsenic, and in the intestines at one eleventh of a grain. The quantity in the kidneys was not estimated, but must have been small. There could hardly have been more than two thirds of a grain in the whole body. The bedding and bedclothes showed no trace. There was no trace of the fibre of the fly paper anywhere, nor any evidence of filtering or straining in order to get rid of it, and the fact that Mrs. Maybrick used an arsenical face wash has also been proved.

Does this evidence afford clear indications of arsenical poisoning? or can the illness and death be explained by the administration of strychnine together with the other circumstances mentioned? No one alleges that Mrs. Maybrick gave her husband strychnine, or had any strychnine in her possession.

A Barrister.

Proceedings of Societies.

SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL.

Meeting of January 8, 1896.

The President, Dr. Parker Syms, in the Chair.

Asphyxia from Fæcal Vomiting during Administration of Ether.—Dr. Charles Phelps reported such a case. (See page 377.)

Dr. John W. S. Gouley said that several such cases had come under his observation. One of them had occurred during the riot of 1863: an amputation had been about to be performed when the patient had begun to struggle, and while vomiting, some of the vomited matter had entered the trachea, and he had instantly died. Another case had occurred at Bellevue a few years ago. The patient, while taking ether, had suddenly ceased to breathe and died. It had been supposed that he had had nothing to eat that day, and the question had arisen, What killed him? At the post-mortem exam-

ination a fluid had been found in the lungs which had had a strong odor of soup, and a few days later it had been learned that the man's wife, on the day of the operation, had surreptitiously slipped a bottle of soup into his bed and he had swallowed it just before he was taken to the operating room.

Dr. CHANDLER said that last summer he had reported a case very similar to the one mentioned by Dr. Phelps. The operation had been for an appendicitis, and there had been paralysis of the bowel and some occlusion by a band of omentum. There had been fæcal vomiting and respiration had ceased immediately. Tracheotomy had been done, but it had failed to help revive the patient. The speaker said he agreed with Dr. Phelps that such accidents as these should impress upon us the fact that some of these operations could be done under a local anæsthetic.

Dr. JOHN F. ERDMANN referred to two similar cases that he had observed. One had been a case of intussusception; chloroform had been administered, fæcal vomiting had occurred, and the patient had ceased breathing. The second case had occurred some years ago; the patient was being operated on for strangulated hernia, when vomiting and instant death had taken place; at the autopsy fæcal matter had been found in the trachea. The speaker said he had recently employed local anæsthesia in operating in cases of hernia containing both omentum and gut. One patient had been a woman, fifty-nine years old, who had been suffering from a strangulated femoral hernia with fæcal vomiting, and whose general condition had been very poor. A normal salt solution, containing two per cent. of cocaine, had been used, and of this it had been only necessary to inject eight minims during the entire operation. About four inches of omentum had been removed. The patient had felt a little pain while the last sutures were being put in.

Dr. DI ZEREGA referred to one case which had occurred at Bellevue during his service there. Four days after the performance of McBurney's operation for hernia, fæcal vomiting had begun, and it had been evident that there was intestinal obstruction. To relieve this a second operation had been immediately undertaken; before it had been well under way there had been a discharge of fæcal matter from nose and mouth, and the patient had stopped breathing. He had been at once inverted so as to allow the fæcal matter to escape from the trachea. Artificial respiration had then been begun, and for about five minutes the patient had done fairly well. Then he had had another attack of vomiting, and had died. At the autopsy it had been found that the gut had been constricted by a band which had been the result of a stab wound of the abdomen received eleven years previously. The opportunity had been also taken to inspect a McBurney operation for hernia on the fourth day, and the result had been very satisfactory.

Dr. PHELPS said the point of special interest in his case was the actual demonstration of the fact that fæcal matter had been carried deep into the respiratory tract, and had been extruded after artificial respiration had been begun. Another point of interest was the instantaneous death of the patient. He thought that one such case was enough to convince any surgeon who was unfortunate enough to see it that local anæsthesia should be used in every possible case of strangulated hernia. There certainly had been no fæcal matter in this man's stomach when the operation had been begun. In cases where the tumor was large, with an inflammatory condition, or where the patient was nervous and irritable, a general anæsthetic was imperative, but such cases were exceptional.

The PRESIDENT called attention to the use of lavage of the stomach in cases of fæcal vomiting. This procedure, he thought, had been first introduced in New York by Dr. Hartley. He regarded it as a precaution against this accident; it certainly cleansed the stomach so that vomiting was less apt to occur. In cases of complete exhaustion it helped revive the patient.

Dr. A. B. JOHNSON said he had had no personal experience with lavage of the stomach in these cases. Dr. Hartley had done it in a number of cases, and the procedure had been very highly recommended in the German medical journals.

Dr. DI ZEREGA said that lavage of the stomach had been resorted to in the case he had just reported.

Dr. PHELPS said that in these cases the entrance of fæcal matter into the stomach might occur at any moment during the operation; he did not think, therefore, that lavage of the stomach could be regarded as a prophylactic measure.

Pistol-shot Wound of the Cervical Vertebræ. — Dr. CHARLES PHELPS presented such a specimen. (See page 377.)

Thrombosis of the Popliteal and both Tibial Arteries. — Dr. CHARLES PHELPS presented a specimen of this condition. (See page 378.)

Dr. GOULEY said he had seen this patient previous to the operation. There had then been incipient gangrene, and he had made a diagnosis of occlusion of the popliteal, and possibly of the femoral artery as well.

Osteosarcoma of Tibia.—Dr. PHELPS presented a specimen of this affection. (See page 378.)

Dr. GOULEY said that he regarded the specimen as a very interesting one of osteosarcoma. He called attention to the remarkable thickening of the shaft of the bone, and stated that when he had seen the fresh specimen, the entire marrow had been very red, resembling the tissue known as medullary sarcoma, consisting largely of round cells and giant cells. The fracture, which had been as nearly transverse as a fracture could be, had been apparently in process of union, as there had been soft callus between the fragments. The displacement had been very slight. The bone had been so hard that it was probable that the incurvation of the shaft had been not the result of the disease, but had existed before.

Sarcoma of the Scapula.—Dr. A. B. JOHNSON presented a specimen of this kind. He said that it had been taken from a man, forty-five years of age, who had stated that four years ago he had fallen and injured his shoulder. Soon afterward a small tumor had been noticed in the supraspinous fossa, and this had continued to grow steadily, and had been associated with considerable pain and limitation of the motion of the shoulder. There had been no loss of flesh. When the man was admitted into the Roosevelt Hospital on October 3, 1895, examination had shown a tumor in the supraspinous fossa having a transverse diameter of four inches and a half. It had been fairly hard, not tender, and had not involved the shoulder joint. On October 9th the entire scapula had been removed, together with the tumor and the intrinsic muscles of the scapula. The divided ends of the muscles had been united by catgut sutures, and the wound had been sutured and drained with gauze. Owing to the formation of a small slough at the free angle of the flap, healing had not been complete until November 5th, at which time the man had been discharged from the hospital. At this time there had been but little motion in the shoulder joint. The pathologist's examination had shown the tumor to be a giant-celled sarcoma. The specimen was of interest as showing the way in which the tumor had spread in various directions. It had evidently originated at the junction of the spine with the body of the bone, and had then grown both outward and inward, perforating the infraspinous fossa and also the bone

anteriorly. A small secondary tumor had been found in the skin just over the tip of the acromion process.

Perforating Ulcer of the Stomach.—Dr. Charles C. Barrows (through Dr. Brown, of the House Staff of Bellevue Hospital) presented a specimen of this kind, removed from a girl of eighteen. There had been no history of injury or strain, and she had been in fair health up to three years ago, at which time she had first begun to suffer from a sharp paroxysmal pain in the left ovarian region. It had been more severe at the menstrual periods. The menstrual flow had been for the most part regular and rather scanty. She had suffered from chronic constipation, and for the past two years had usually vomited after meals. On December 7, 1895, while standing chatting with her mother, she had experienced a sharp, agonizing pain in the right side of the abdomen below the umbilicus. No relief having followed simple home remedies, a physician had been summoned, and under the use of poultices and a hypodermic injection she had been more comfortable. With the first attack of pain there had been vomiting. She had had some fever during that night, but when she was admitted into the hospital, on the following afternoon, the temperature had been 100°, the pulse 140, and the respiration 48. There had also been great abdominal distention and every sign of general peritonitis. The patient's condition had been very bad at this time, but laparotomy had been at once performed. On incision over the cæcum fluid had exuded with flocculi of lymph, but the abdomen had been found normal. The patient had died six hours after the operation.

Sacculated Varix of the Femoral Vein.—The President presented such a specimen. The patient had been a young lady, twenty-two years of age. Her general health, past history, and family history had been good. She had complained of a swelling in her right groin which had produced no subjective symptoms except slight pain. Examination had shown a tumor about an inch in diameter. It had had the appearance and had been in the situation of a femoral hernia which had left the femoral canal. It had been soft and elastic, it had expanded on coughing, and could be reduced by pressure. Dr. Paul Outerbridge had operated, assisted by Dr. Syms. On cutting through the skin and fascia the tumor had been found to consist of a sacculated varix connected with the femoral vein by a small pedicle which had emerged through the femoral ring. The pedicle had been ligated and the sac removed. The patient had made an uneventful recovery.

Dr. John B. Gibbs said that in Dr. Syms's history of his case he had referred once or twice to syphilis as a possible cause of the varix. It had been apparently a simple varix, due to some unknown or perhaps some physical cause, and he did not see why its presence should be attributed to syphilis. He had never seen any disease of the veins due to syphilis.

Dr. Gouley said that the point that interested him was the application of a lateral ligature to the vein. This had been successfully done in many instances. It had been first practised, he thought, by the elder Mott, who, while operating on the neck, had accidentally nicked the internal jugular. The vein had been instantly caught by the forceps and a lateral ligature applied, which had proved entirely successful.

The President said that he had been unable to find in literature any case similar to the one reported. The text-books described aneurysmal varices and varicose aneurysms, but a single, simple sacculated enlargement of the vein, as existed in this case, was unique, so far as he knew.

Fistula in Ano in Reference to Integrity of the Rectum after an Operation.—Dr. John Blair Gibbs read a paper with this title. (See page 378.)

Dr. Gouley referred to the extreme difficulty experienced in keeping wounds involving the rectum in an absolutely aseptic condition. He agreed to the statements made by Dr. Gibbs regarding the danger of reckless incisions, but multiple incisions might be necessary in cases where there were multiple external orifices. It was not always possible to find an internal cloaca to the sinus, and in such cases he was in the habit of making one in order to open the sinus freely. In a certain number of cases of the milder type he had introduced a silken ligature through the sinus and cloaca, and, by tightening this from day to day, it had gradually been made to cut its way out. He had also employed the elastic ligature, which worked more rapidly than the silk, although he preferred the latter.

Dr. Johnson said that his experience in attempting to close these wounds by primary union had been similar to that of Dr. Gibbs—namely, that the failures had exceeded the successes. Fortunately, but few of these operations, in his hands, had been followed by incontinence, but these few had been distressing in the extreme. He fully agreed with the previous speakers as to the difficulty of keeping these wounds clean; it was sometimes impossible to follow up or find all the fistulous channels, which always contained infectious material.

Dr. Porter said that with the method he now employed in dealing with these cases he had been very successful in obtaining primary union. Instead of cutting down freely upon a grooved director, he dissected out the fistulous tract. In some cases this required very careful dissection, as there might be a number of branches or offshoots from the original channel. By pursuing this method the danger of leaving infectious foci behind was lessened. He was aware of the fact that the chief source of infection was from the rectum, and by dissecting up these tracts carefully we were more likely to find the opening into the rectum than by merely slitting them up. During the operation the bowel should be thoroughly washed out with the double catheter, and after its completion a plug of iodoform gauze should be put in.

Dr. Robert T. Morris said that in the tuberculous cases, with serous infiltration of the connective tissue, he made no attempt to suture structures. He simply opened the tracts, drained, and allowed the gaps to be filled by granulation. In other cases, where there was slight infiltration and where the acute process had apparently subsided, he usually attempted to suture structures after removal of the fistulous tracts. In two or three cases he had injected plaster of Paris into the tracts for a guide. After dissecting out the fistulous tracts in the cases which had admitted of this course, he had attempted to suture the structures in their proper relative position, including the deeper connective tissue, the sphincter muscle, and the mucosa. He had then covered the wound with aristol or finely powdered iodoform, which had been allowed to dry, and which formed a lymph coagulum along the suture line. Just how much protection this had afforded he did not know, but in a pretty large proportion of suitable cases he had obtained primary union. It was rather difficult for bacilli to make their way through the lymph coagulum formed by the aristol, and when this was replaced by connective-tissue cells, as it shortly was, the danger of infection was still slighter.

Dr. Gibbs said that in his paper he had purposely avoided all details, his object being to get an expression of opinion from the others present as to their success in obtaining union by first intention after operations of this kind. He was perfectly willing to confess his own lack of success in this direction. In some cases, where the fistulous tracts were very extensive, it was a difficult matter to entirely eradicate them, and at the same time preserve the integrity of the gut itself.

He knew of no way in which this could be done except by uniting the cut ends of the various structures. His paper had had reference to the deep, severe fistulæ, rather than to the milder ones, where the fistulous tracts could be dissected out without much difficulty.

Obliterative Appendicitis with Ultimate Abscess Formation.—Dr. Russell Bellamy read a paper with this title. (See page 380.)

Dr. Morris said that the title of this paper called for a little discussion in nomenclature. Obliterative appendicitis had first been described by Ribbert, of Zurich, about three years ago, who, in four hundred post-mortems (death being due to other causes than appendicitis), had found partial or complete obliteration of the appendix in twenty-five per cent., the obliteration being due to involution changes. Such a case should not be called appendicitis. Senn, about two years ago, had described a similar process occurring without bacterial infection, and resulting in a replacement of the mucosa and lymphatic structures of the appendix by connective tissue. These belonged to the involution-process class, and could not properly be called an inflammation. The name "appendicitis" could only properly be given to cases in which there was an infective, exudative inflammation which destroyed the appendix, either wholly or in part. The method of treating the abscess in the case reported by Dr. Bellamy was apparently a wise one, as the result had proved, but the fact remained that we were too much in dread of pus entering the peritoneal cavity. If the abscess cavity referred to had been opened, and the escaped pus destroyed by hydrogen dioxide, and then the whole cavity flushed with physiological saline solution, there would probably have been no trouble from subsequent infection.

The speaker said that the neurasthenia which might appear after an operation for appendicitis, while not peculiar to these cases, was quite characteristic of them. He believed it to be due to the toxæmia.

Dr. Erdmann reported the result of two post-mortem examinations recently made by him. The first case had been that of a man, aged fifty-three, who had died of apoplexy. The appendix, which had been in a healthy condition, had contained a shot of about the size of a lentil. It was doubtful how long this shot had been there, and it was hardly necessary to say that the man had had no game to eat while he had been in the hospital. The second case had been that of a woman, aged fifty-eight, whose fatal illness had been in no way associated with appendicitis. The appendix had been in a healthy condition and had contained two large, hard fæcal masses. A third case had been that of a man with an inguinal hernia with marked fæcal vomiting. In this case he had used a five per-cent. solution of cocaine, twenty minims in all, and no pain had been felt throughout the operation, the patient arising from the table and walking to his bed without any discomfort.

He believed that a two-per-cent. solution of cocaine or even a weaker one, in normal salt solution, was sufficient in these cases and far preferable to general anæsthesia.

Dr. Gibbs said that the classification of appendicitis was growing larger and more complex daily. He thought all cases might be classed as follows: Those in which pus was about to form or had formed, and those in which no pus had formed or would form. One required operation; the other did not. The technics of the operation must be based in each case upon what we found on opening the abdomen.

Dr. Bellamy said that he thought the method of procedure followed by Dr. Kocher in the case reported was rather unique. Dr. Wyeth and Dr. Dawbarn, of New York, had both recorded cases in which they had waited a day for adhesions to form before opening an appendicular abscess. Dr. Kocher, in this case, had waited a week. Regarding the neurasthenia following operations on the appendix, Dr. Bellamy said that he had looked up the literature on this subject, and none of the text-books said anything about it. Three such cases had come under his personal observation.

Book Notices.

Principles of Surgery. By N. Senn, M. D., Ph. D., LL. D., Professor of Practice of Surgery and Clinical Surgery in Rush Medical College, Chicago, etc. Second Edition, thoroughly revised. Illustrated with One Hundred and Seventy-eight Wood Engravings and Colored Plates. Philadelphia: The F. A. Davis Company. London: F. J. Rebman, 1895. Pp. xvi–656. [Price, $4.50.]

The Pathology and Surgical Treatment of Tumors. By N. Senn, M. D., Ph. D., LL. D., Professor of Practice of Surgery and Clinical Surgery, Rush Medical College, etc. Illustrated by Five Hundred and Fifteen Engravings, including Full-page Colored Plates. Philadelphia: W. B. Saunders, 1895. Pp. 709. [Price, $6.]

According to the author, the aim of these volumes is, first, to lighten and facilitate the work of the student and general practitioner in acquiring a thorough knowledge of the fundamental principles of surgery, and, second, to impart a knowledge of the structure and clinical tendencies of the different kinds of tumors sufficiently accurate to enable the physician to make a reliable diagnosis at the bedside and so aid the surgeon in deciding "when to apply his art or when to pursue a conservative or palliative course."

The two together form an exhaustive yet practical treatise on surgical pathology of rare value. One of the characteristics of all the author's work is thoroughness, and the quality is evident in these publications.

The sources of his information form a copious bibliography, both domestic and foreign, and he has well succeeded "in presenting the views and opinions of the authorities quoted with clearness and thoroughness," besides including the results of a large and varied experience fully digested by a scholarly mind. In this second edition of the *Principles of Surgery* much new material has been added, including fifty new illustrations, and the technics of a number of operations described and illustrated.

The excellence of the long-promised volume on *Tumors* atones for the delay in its publication. So far as possible, every tumor is traced to its proper anatomical starting point and histogenic source, and a sharp distinction is made between true tumors, inflammatory swellings, and retention cysts.

The first are defined as due to "a localized increase of tissue, the product of tissue proliferation of *embryonic cells* of congenital or post-natal origin, produced independently of microbic causes," while an "inflammatory swelling results from tissue proliferation provoked by the action of pathogenic microbes or their toxines upon pre-existing *mature tissue* cells," and retention cysts consist essentially of accumulations of physiological secretions in preformed glandular spaces, the result of mechanical obstruction. Although not true tumors, they are considered as a matter of aid in diagnosis.

The microbic origin of tumors, not having been established, is briefly disposed of.

The structure and character of a tumor depend upon the stage of the arrested cell growth and upon the embryonic layer from which the matrix is derived, and its life history is greatly influenced by the inherent formative capacity of its cells as well as by the general condition of the patient.

A benign tumor remains local, tissue growth being limited to the fixed primary matrix. It pushes aside the tissues to make room for itself. A malignant tumor gives rise to dissemination by cell migration or transportation through the lymphatics or the general circulation, and tends to infiltrate the neighboring tissues, including them as temporary passive constituents of the tumor mass.

The law of the differentiation of cells in the embryo applies to the growth of tumors, and, as a rule, no transition from one type to another takes place; "the specific nature of *imperfectly* differentiated cells is permanently retained. Yet we must admit that the transformation of a benign growth and of a matrix of embryonal cells of post-natal origin into a malignant tumor is not only possible but probable when the embryonic cells, under the influence of local or general causes, assume active tissue proliferation, and their migration is permitted by a diminished physiological resistance on the part of the adjacent tissues."

The first eight chapters are on the origin and nature of tumors, their morphology, anatomy, biology, pathology, ætiology, etc., and on tumors in plants and animals, in regard to which latter due credit is given to Williams and Sutton for their work in this direction. Then follow chapters on the clinical aspects of benign and malignant tumors, on the transformation of tumors, and on the diagnosis, prognosis, and treatment. This part of the work is condensed into a hundred and thirty pages. The remaining five hundred and seventy are devoted to the classification of tumors and the description of their various divisions. The author proposes a somewhat new classification, with special reference to their origin from the different germinal layers, as follows:

1. Epiblastic and hypoblastic tumors, corresponding to the epithelial type of Cohnheim: Papilloma, adenoma, cystoma, and carcinoma.

2. Mesoblastic tumors. Connective-tissue type: Fibroma, lipoma, myxoma, chondroma, osteoma, angeioma, lymphangeioma, myoma, neuroma, and sarcoma.

3. Epiblastic, hypoblastic, and mesoblastic tumors: Teratoma.

4. Retention cysts.

This seems the best yet presented. The illustrations are numerous and good, and more than a hundred of them are original, while the remainder have been selected from books and medical journals not readily accessible to the student and the general practitioner.

The "description of each class of tumors is followed by a consideration of the topographical distribution of that particular kind of tumor in the different regions and organs of the body, with a description of the different operative procedures for their removal. The more difficult operations are fully described and illustrated."

The work will prove a useful text-book for the student, a valuable reference volume for the busy practitioner, and a thoroughly reliable guide for the surgeon.

Physical and Natural Therapeutics. The Remedial Use of Atmospheric Pressure, Climate, Heat and Cold, Hydrotherapeutic Measures, Mineral Waters, and Electricity. By Georges Hayem, M. D., Professor of Clinical Medicine in the Faculty of Medicine of Paris. Edited by Hobart Amory Hare, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia. With One Hundred and Thirteen Illustrations. Philadelphia: Lea Brothers & Co., 1895. Pp. 17 to 426.

The collaboration of two authorities so able as the author and the editor of this volume must, almost of necessity, be productive of a work of merit. Such is indeed the case with this book, and, though in some respects we must own our disappointment, it is perhaps due to our expectations having been unreasonable. The opening chapter (Part I), on atmospheric pressure as a therapeutic agent, it seems to us, would have been more satisfying had the therapeutical considerations given in it been ampler; as it stands, they are confined to the briefest of assertions, and by far the larger part of the chapter is devoted to apparatus.

Part II deals with climate, and is a very good presentation, in brief, of the most important facts of climatic treatment. It is extremely condensed, however, and those who really desire to study and to know climatic therapeutics will scarcely be content with what it contains.

Part III is on thermic agents and Part IV on hydrotherapeutic measures. Each is interesting in itself, but is of special value in conjunction with Part V, which deals with mineral waters. It is this chapter on mineral waters which has given us particular pleasure, for in it the subject is unusually well presented. The matter is so well arranged, the expression is so forcible and clear, and the consideration is so sufficient that one loses the impression of condensation and even of meagreness which is suggested by the earlier chapters. One may find in this chapter, indeed, more tangible and valuable information upon the subject than is contained in many an entire book.

Part VI is on electricity and is certainly the most complete the book contains. A large portion of it is devoted to apparatus and to the study of electro-physics, but sufficient is given of therapeutics, and the chapter is one of great excellence.

That some of the chapters of the book are scarcely ample enough is certainly true, but it must be remembered that each of the six parts is in itself sufficient for monographic treatment and, in fact, that these subjects are oftener treated of in books devoted to their individual consideration. As it is, the volume is a welcome addition to therapeutic literature and may be read to great benefit and advantage.

The Life of Sir Henry Halford, Bart., G. C. H., M. D., F. R. S., President of the Royal College of Physicians; Physician to George III, George IV, William IV, and to Her Majesty Queen Victoria. By William Munk, M. D., F. S. A., Fellow and Late Vice-president of the Royal College of Physicians of London. London and New York: Longmans, Green, & Co., 1895. Pp. xv–284.

A more thoroughly charming biographical composition than this it would be difficult to conceive of, and much of its excellence is due to the success which has followed the author's plan in writing it. He says: "I have striven to place myself *in* the period of which I am speaking, and *out* of that in which I am actually writing. . . . We have to judge of men according to their actual environments, and I have sought to place Sir Henry Halford, his personality and character, in due relation to his contemporaries and surroundings, and to the spirit of the time in which he lived." The character and

ability of Halford, the times in which he lived, the eminence to which he attained, and the intimate professional relation which he bore to the royal family of England combine to make the well-told story of his life one of no ordinary interest and importance. Though it is the story of a physician and told by a physician, it is not likely to fail to be of interest to general readers, for of medicine it contains but little, and of technicality none.

Halford was accused of being unscientific, of slighting the importance of the disease causation and condition in a superficial attention to the relief of symptoms and the comfort of the patient. No doubt these accusations were for the greater part born of jealousy, for no man achieves success like his without incurring enmity. The accusation of being a courtier was apparently more justly made, and indeed it is not surprising that one who for a long time resides at court should in some measure imbibe the manners of his associates. That Halford was a courtier of the baser sort is untrue; though jealousy made use of the term courtier in no friendly spirit, it was clearly inapt save to describe him as a man of polish, cultivation, tact, and even manner — surely not unworthy traits.

Although it is no doubt true that the type of the English physician has changed much since the days of Halford, a far greater contrast would seem to exist between such as he and our medical contemporaries of other lands, for English physicians of the present day are many of them men of wide classical knowledge and attainments, apart from the technical ability they possess, while with others science is all-consuming. In short, the tendency of modern medicine is to make its student more scientific and less of a man, and in regarding it as a science we forget that it is also an art. No book will more forcibly suggest this tendency and these differences (though differences they indeed are, they need never become incompatibilities) than the *Life of Sir Henry Halford.*

Students' Aid in Ophthalmology. By Gertrude A. Walker, A. B., M. D., Clinical Instructor in Diseases of the Eye at the Woman's Medical College of Pennsylvania. Forty Illustrations and Colored Plate. Philadelphia: P. Blakiston, Son, & Co., 1895. Pp. 9 to 183. [Price, $1.50.]

Few fields in medicine have been so thoroughly tilled as ophthalmology, and certainly there is scarcely one that offers such an incentive to the theoretical or practical investigator; with its connection through optics and colors with the physical world, through the brain and in many other ways with general medicine, and with its own peculiar problems in many instances still unsolved, it would seem that original work would attract ophthalmologists rather than the writing of small books intended to aid students. With such text-books as those of Fuchs, Noyes, Swanzy, and Nettleship, seekers after elementary knowledge, either in full or in brief, may well be content.

After this mild protest against the class of ophthalmological complications of which this book is a type, we may say that the author has done as well as the average. The descriptions of diseases, when not too brief, are well and even graphically written, and with the example of Fuchs and the Philadelphia teachers, whom she has followed loyally, the author has had little chance to err. A few corrections should, however, be made in a future edition. On page 40, the statement "the correction of presbyopia is accomplished by a convex glass strong enough to bring the near point of distinct vision to the required distance" is misleading, as it does not regard the reserve accommodation, which, as Landolt has shown, must equal one third of the total power of accommodation to make a continued effort of the ciliary muscle practicable. On page 63, "bi-refrigerant" should be *birefringent.* On page 67 the nuclei of the third, fourth, and sixth nerves are stated to be in the floor of the fourth ventricle. On page 81 it is stated that the posterior ciliary arteries supply the conjunctiva of the lids. The lids are supplied by the superior and inferior marginal branches of the palpebral arteries, branches of the ophthalmic. The statement made on page 33 that the ciliary muscle, by the contraction of a part of its circumference, can vary the curvature of the lens so as to compensate for astigmatism, first made by Dobrowolsky, seems to have been disputed with authority by Bull, of Paris, at Heidelberg in 1891.

The general appearance of the book as regards type, illustrations, and binding is excellent.

The Yearbook of Treatment for 1896. A Critical Review for Practitioners of Medicine and Surgery. Philadelphia: Lea Brothers & Co., 1896. Pp. viii–476. [Price, $1.50.]

The twelfth issue of this useful work requires no introduction, for its eleven predecessors have established for it a reputation which has made it well known and highly esteemed. Few changes have been made in the present issue. A brief section on tropical diseases has been added in which is given the recent literature on malaria and dysentery. The section on diseases of the stomach, intestines, liver, etc., has been contributed by Dr. Hale White. Beyond these, the book is the modernized repetition of its immediate predecessor. The Summary of the Therapeutics of the Year 1894–'95 is scarcely so inclusive as it might have been, but conservatism is certainly an essential in the domain of new remedies, and we have far oftener to note its violation than its observance. The *Yearbook* for 1896 is in every way worthy of its predecessors.

BOOKS, ETC., RECEIVED.

Electricity in Electro-therapeutics. By Edwin J. Houston, Ph. D., and A. E. Kennelly, Sc. D. New York: The W. J. Johnston Company, 1896. Pp. vii–402. [Price, $1.]

Handbook for the Bio-chemical Laboratory. Including Methods of Preparation and Numerous Tests arranged Alphabetically. By John A. Mandel, Assistant to the Chair of Chemistry, etc., at the Bellevue Hospital Medical College and the College of the City of New York, etc. First Edition. First Thousand. New York: John Wiley & Sons. London: Chapman & Hall, Limited, 1896. Pp. 101. [Price, $1.50.]

Health in the Home. A Practical Work on the Promotion and Preservation of Health. With Illustrated Prescriptions of Swedish Gymnastic Exercise for Home and Club Practice. By E. Marguerite Lindley, Lecturer on Health-culture. New York: Published by the Author, 1896. Pp. xii–414.

Don'ts for Consumptives; or, the Scientific Management of Pulmonary Tuberculosis. How the Pulmonary Invalid may Make and Maintain a Modern Sanatorium of his Home, with Additional Chapters descriptive of how every Consumptive Person may apply the Forces of Nature to assist and hasten Recovery, and also how the Defects of Heredity may be Best Overcome. By Charles Wilson Ingraham, M. D., of Binghamton, N. Y. February, 1896. Pp. xviii–21 to 218.

Cornstalk Disease, and Rabies in Cattle. Investigations conducted under the Direction of Dr. D. E. Salmon, Chief of the Bureau of Animal Industry. January, 1896. Bulletin No. 10. [United States Department of Agriculture.]

Climate and Health. Edited under the Direction of Professor Willis L. Moore, Chief of the Weather Bureau, by W. F. R. Phillips, M. D. Number Six. A Summary of Statistics for the Four Weeks ending December 28, 1895. [United States Department of Agriculture.]

Estudios referentes a la Desecación del Lago de Texococo. Año de 1895. Primera Parte. Mexico: Oficina Tipografica de la Secretaria de Fomento, 1895. Pp. 3 to 126.

Transactions of the American Ophthalmological Society. Thirty-first Annual Meeting. 1895.

The Demilt Dispensary of the City of New York. Forty-fifth Annual Report, etc., for the Year 1895.

Poliomyelitis occurring in an Epidemic Form, followed Twelve Years Later by Progressive Muscular Atrophy and Lateral Sclerosis. By J. T. Eskridge, M. D., of Denver, Col. [Reprinted from the *Colorado Medical Journal.*]

Diagnostic Palpation of the Female Pelvic Organs. By George M. Edebohls, M. D. Read before the Post-graduate Clinical Society, March 5, 1895.

Inversion of the Vermiform Appendix. By George M. Edebohls, M. D. [Reprinted from the *American Journal of the Medical Sciences.*]

Miscellany.

Vivisection and Dissection in the Public Schools.—In its March number, *Our Animal Friends*, which is the organ of the American Society for the Prevention of Cruelty to Animals, justly deprecates the enactment of a law "to prohibit the [*sic*] vivisection and dissection in the public schools of this State" (New York), as a bill is entitled that was before the legislature recently. Our contemporary says:

"During the long experience of our society it has been found that nothing obstructs our work more surely than attempted needless special legislation, and it rarely happens that a session of the legislature passes without the introduction of some well-meant bill, the only certain effect of which would be to weaken, and not to strengthen, the present excellent laws for the protection of animals. The bill above quoted is distinctly of that class; and we shall now proceed to show (1) that the evil which it is intended to correct does not exist in this State; (2) that the existing law is amply sufficient to prohibit its introduction and to suppress it if it should be introduced; and (3) that the bill, if it should be enacted, would have no other effect than to weaken the provisions of the present law in this very matter of vivisection.

"Since November last we have had repeated statements made to us that vivisection has been practised in three of the public schools of the State. These three are the only schools against which the charge has been brought. In one of them the evidence is so absurdly self-contradictory as to prove the whole story to be a mere *canard*, and an investigation into the other two has proved the charge to be equally unfounded. The principal of one of the schools writes in the following explicit terms: 'Vivisection never has been and never is likely to be practised in our school'; and the principal of the other writes, not less explicitly: 'No demonstrations or experiments upon living animals have ever been performed here.' As these are the only schools in which so much as a rumor of the practice of vivisection has reached us, and as we believe it would not be possible for that practice to be introduced into any part of this State without some report of it reaching the office of our society, we feel ourselves at liberty to affirm with confidence that vivisection is not practised in the public schools of the State of New York. It follows, as a matter of course, that no law is required for the suppression of a practice which does not in fact exist.

"Our next point is that the present general law of the State is amply sufficient for the suppression of the practice, if it did exist. Section 655 of the Penal Code enacts that 'a person who . . . tortures . . . or unjustifiably injures, maims, mutilates, or kills any animal, whether wild or tame, . . . or who willfully sets on foot, instigates, engages in, or in any way furthers any act of cruelty to any animal, or any act tending to produce such cruelty, is guilty of a misdemeanor.' In order to exclude the plea that vivisection is not 'unnecessary torture,' and does not constitute the misdemeanor of 'cruelty,' the 10th section of Chapter 375 of the laws of 1867 distinctly restricts the practice of vivisection to one single class of persons, and regulates the conditions under which alone it may be practised. The language of the law is this: 'Nothing in this act contained shall be construed to prohibit or interfere with any properly conducted scientific experiments or investigations, *which experiments shall be performed only under the authority of the faculty of some regularly incorporated medical college or university of the State of New York.*' Only under the authority of an incorporated medical school or university can vivisection be practised in this State, and, since the 'authority' of these institutions does not extend to any other schools, nor to any person whomsoever not belonging to such organizations, it follows that neither a public-school teacher nor any other person, not belonging to some incorporated medical school or university, can practise vivisection under our present law without committing a criminal misdemeanor for which he may be punished. The enactment of any new law to prohibit what the present law sufficiently prohibits would be mere surplusage.

"But it would be worse than surplusage, for it would be more than likely to unsettle the present law by raising doubts of its construction, and consequently of its application in cases concerning which there is no present dispute. At present, no one pretends, nor can pretend, that any person not acting under the authority of a medical college or university can lawfully practise vivisection in this State; but if the first section of the proposed bill should be enacted, what would be the effect? Since it forbids public-school teachers to practise vivisection *only in the presence of their scholars or other minors*, would it not be reasonably inferred that such teachers are henceforth to be at liberty to practise it, provided only that their scholars or other minors are not present? We do not say that the inference would be justifiable, nor that the courts would ultimately sustain it; but what we do say is that the enactment of the proposed bill could have no other effect than to unsettle the construction of a law which is amply sufficient, and concerning the construction of which there has hitherto been no question.

"Another not less undesirable result might follow the enactment of this superfluous and wholly unnecessary bill. Besides the public schools of the State, there are many hundreds of private schools, *which are not included* in the scope of the bill. Suppose the teachers of those schools should contend that a law which forbids vivisection only in *public* schools is clearly not intended to apply to *private* schools, and should thereupon proceed to introduce vivisection into their course of instruction in physiology? Again we say that we do not believe that such a contention would be ultimately sustained by the courts; but we do say, as before, that a merely superfluous law would have the effect of bringing the present unquestioned law into dispute.

"For these reasons—because the nefarious practice of vivisection in the public schools does not exist in the State of New York; because the present law is amply sufficient for its suppression if it did, or should, exist; and because the only effect of the proposed law, so far as vivisection is concerned, would be to bring the present law into doubt, and so to weaken its efficiency—therefore, we are constrained, with entire respect for the promoters of the measure, to hope that it may not be passed by the legislature.

"On the subject of the dissection of dead animals, or parts of animals, in schools, we are not called to speak. That subject belongs exclusively to parents and educators. Our work is the protection of living animals, not the use which may be made of their dead bodies. Nevertheless, since the killing of animals for the purpose of dissection is included in the proposed bill, and since the law forbids the 'unjustifiable killing' of animals, as well as cruelty to them while alive, and our society is as much bound to prevent unjustifiable killing as to prevent cruelty, we may permit ourselves to say a word on this subject also. The question is whether the humane killing of an animal for dissection is 'unjustifiable,' and the answer must be that it is not necessarily unjustifiable. If the dissection is lawful and beneficial to human beings, then it is as justifiable to kill an animal for that purpose as to kill it for food. Now, no one pretends that the dissection of a dead animal is wrong *per se;* consequently the whole question turns on the right or wrong of dissection *in schools;* and here we would advise the friends of the proposed measure not to be too precipitate, lest they injure the very cause they have at heart. We agree with them that even the dissection of dead animals *in schools for young children* is utterly useless and even harmful; but we do not believe that public opinion will sustain a measure forbidding all dissection in schools of an advanced grade. There must be some discrimination, or the whole movement will presently be discredited as a piece of theoretical legislation, unworthy of respect or obedience. Something, too, we submit, must be left to the discretion of teachers, who are the best judges of the sort of instruction which is adapted to their pupils. This, however, as we have said, does not belong to our special responsibility, and we gladly leave it to those who are most concerned."

Some Considerations with Regard to Cough.—To the March number of *Medicine* Dr. Robert H. Babcock, of Chicago, contributes a paper on this subject in which he says that there are some rather interesting peculiarities and conditions concerned in the symptom of cough, and that it may often be found depending upon some condition remote from primary disease of the respiratory tract. It is well to bear in mind, he says, that the reflex sensibility of the air-passages is not the same throughout. Chronic congestion and mechanical irritation, as from mucus, if situated in the pharynx or about the epiglottis, will often occasion frequent and violent paroxysms of cough which deceive both patient and physician and lead them to conclude that there is a most serious pulmonary affection.

Any one who has observed many cases of heart disease must have been struck, he says, by the fact that passive pulmonary congestion is not always associated with cough. He has records of cases of mitral disease in which stasis within the pulmonic system could not have failed to be marked, and yet cough was hardly ever complained of. He can only explain such cases as due either to individual differences in reflex excitability of the nervous system, or to preponderating congestion of the large bronchi in the cases of cough, while the bronchioles bear the brunt of the stasis in those without cough. Such an hypothesis, he says, is not altogether at variance with anatomical facts. According to our present knowledge of the anatomy of the lungs, there is a twofold connection between the bronchial and the pulmonary blood-vessels. There is an anastomosis between the pulmonary capillaries and those of the smaller bronchi—that is, bronchioles of a diameter of less than one twenty-fifth of an inch. Furthermore, according to Zuckerkandl, some of the veins originating in the walls of the larger bronchi communicate with the pulmonary veins. As neither pulmonary nor bronchial veins are provided with valves, backward pressure from the former into the latter is unhindered, and congestion of the bronchial mucosa results, leading to bronchial catarrh. Sensory filaments are supplied to the entire bronchial tree from the vagus through its connections with the sympathetic. It is by means of these sensory fibres that irritation of the pulmonary tissue produces cough. Yet statements on the part of physiologists as to the sensibility of the lower portion of the bronchial system are rather indefinite; clinical observation of instances of catarrh of the small bronchi with but little if any cough would seem to indicate, therefore, that this symptom is most troublesome when it is dependent upon congestion and catarrh of the larger air-tubes.

With regard to the so-called stomach cough, he says, he was skeptical on this point until after his experience with a case in which the patient had a troublesome and chronic cough. Examination of the upper part of the respiratory tract failed to disclose any cause of the symptom complained of, but a further examination showed, extending obliquely across the epigastrium from the left upward to the right and nearly on the level of the costal arch, a long, hard body a little less than two fingers in breadth, which could readily be pushed upward out of reach. Palpation of this body not only evinced tenderness, but evoked prompt and explosive cough. This body, says Dr. Babcock, was believed to be the prolapsed pancreas. No cough remedies of any kind were given, but the treatment was directed to symptoms referable to the digestive tract. With improvement of digestion and the removal of constipation the cough ceased.

The explanation of cough in such cases as this, says the author, is not wholly satisfactory. There may be irritation of the gastric portion of the vagus or some vascular disturbance of the bronchial mucous membrane consequent upon the gastro-intestinal derangement. In this case, he says, pressure upon the displaced pancreas excited such prompt cough as to suggest the probability of reflex spasm through irritation of the pneumogastric.

A rather extended experience with the symptomatology of thoracic disease has taught him, he says, that cough bears no definite relation to the gravity of the primary affection. He has seen so serious a disease as a large aortic aneurysm pressing upon the left main bronchus and producing tracheal tugging accompanied with an insignificant amount of cough; whereas some of the most obstinate cases of cough he has ever treated have been in persons with arterio-sclerosis in whom repeated examinations of the throat and chest failed to show changes commensurate with the symptoms complained of. In some instances cough has been so much relieved by a brisk purge as to suggest its dependence on venous (bronchial) congestion or a toxæmia of intestinal origin.

The cough of consumptives is so variable in respect to frequency, severity, and extent of lung involved, that when it is particularly distressing and intractable it suggests the probability of laryngeal complication or irritation of the bronchial mucosa from tuberculous ulceration or the passage of septic sputa over it. In some instances the frequency of the cough

is largely a matter of habit—that is, the patient yields to his desire to cough upon slight provocation without any attempt to check it. Accordingly it is well to tell patients that they must as far as possible restrain their inclination to cough.

Although the first principle of correct treatment is the removal of the cause where it is possible, there are cases in which this can not be done, notably in heart disease and pulmonary tuberculosis. In such cases, if the cough is allowed to go on unchecked, it may not only exhaust the patient, but often aggravate the existing malady. Under such circumstances it is advisable to administer a sedative, and nothing has yielded such satisfactory results in the author's hands as phosphate of codeine in half-grain or grain doses by the mouth. In administering any form of sedative to quiet cough, one should remember that this means the deadening of the patient's sensibility to the presence of secretions in the air-tubes, as well as the sensibility of his respiratory centre. Therefore, in case of extensive bronchitis of the small tubes the obtunding of the patient's sensibility may permit of a dangerous accumulation of bronchial mucus; the bronchioles may become so much occluded as to greatly interfere with oxygenation of the blood. In feeble patients with hypostatic congestion the administration of a sedative often requires great caution and judgment. In the last stages of consumption the patients are often robbed of sleep and exhausted by the frequency of their cough. In such cases codeine is by far the best remedy at our command; yet in its employment one should remember that the fever and other symptoms of sepsis may be intensified by the retention of the sputa.

Codeine is preferable to morphine or crude opium, because it rarely disturbs the appetite or digestion and is generally free from their unpleasant after-effects. The phosphate of codeine is preferable to the sulphate, because it contains a larger percentage of the base, besides being readily soluble and suitable for hypodermic administration. In cases of *la grippe* with frequent paroxysmal cough Dr. Babcock has employed Wyeth's hypodermic tablets of codeine phosphate, and been greatly pleased with this mode of administration. Quite recently in several cases in which dry spasmodic and prolonged cough called for a sedative and antispasmodic remedy he has obtained quite brilliant results from bromoform combined with gelsemium, as follows: Bromoform, 113 grains; tincture of gelsemium, 120 grains; syrup of lactucarium, enough to make 2·25 ounces; powdered gum arabic, a sufficient quantity. A teaspoonful three or four times a day was the dose prescribed.

In a case in which severe and almost incessant coughing due to acute bronchitis threatened to break down the heart, already greatly enfeebled from mitral and aortic disease, the following prescription accomplished the very happiest results:

℞ Bromoform..... 113 grains;
Codeine phosphate..... 15 "
Compound syrup of squill..... 150 "
Syrup of lactucarium.....to make 4 ounces.
Powdered gum arabic..... ..... q. s.

M. et fiat emuls. Sig.: Two teaspoonfuls every two hours.

In the very early stage of an acute bronchitis with substernal soreness, squill, says Dr. Babcock, is inadmissible, and the hive syrup of this formula had better be replaced by syrup of ipecac or a minute amount of tartar emetic.

A Suggestion to Abolish Gargling in the Treatment of Diseases of the Throat.—At a recent meeting of the British Laryngological, Rhinological, and Otological Association, a report of which appears in the March number of the *Journal of Laryngology, Rhinology, and Otology*, Mr. Lennox Browne read a paper on this subject in which he said that the uselessness of gargles might appear a trite subject to discuss before an association of laryngologists, and his apology for doing so lay in the hope that an agreement on this question would lead to a more authoritative reception of this suggestion for the abolition of gargles by general practitioners of medicine. In subacute and chronic affections of the throat, when the disease lay farther back than the anterior pillars of the fauces, gargles, as employed by the ordinary or popular methods, were inefficient, for the fluid never touched the site of the lesion.

For the purpose of laving the posterior pillars and wall of the pharynx the method of von Tröltsch must be used. The following were the directions: "Take a portion—say a tablespoonful—of the gargle in the mouth, hold it in the back of the throat with the head thrown back; then, closing the nose with the finger and thumb to prevent entrance of air, open the mouth and make the movements of swallowing without letting the liquid go down the throat."

But this process, said Mr. Browne, was by no means easy to carry out efficiently, and was impossible when any acute inflammation of the throat was present, on account of the pain caused by the necessary muscular action. The muscular acts required for ordinary gargling were entirely irregular, being unlike those called for in the exercise of the normal functions, such as breathing, speaking, swallowing, or even laughing. In all cases, therefore, of acute inflammatory disease of the throat wherein the act of swallowing caused severe pain, and even movements of the tongue were attended with discomfort, and in cases (such as those of amygdalitis) in which the mouth could be opened but very slightly, the act of gargling by any method could not but tend to increase the inflammation and the distress of the patient.

Gargles were also contraindicated in cases where the patient required to be kept in the recumbent posture in bed—notably in cases of diphtheria, in which cardiac failure had to be especially guarded against—since the act required him to rise from that position. And as, according to the well-known law, paralytic sequelæ attacked earliest and to the greatest extent muscles in proportion to the constancy of their use, palatal and faucial paralyses, early and frequent as they always were, could not but be accentuated by the irregular and excessive functional exercise involved in the act of gargling.

Lastly, gargles, however employed, whether by the ordinary method or by that of von Tröltsch, could not be safely prescribed unless the ingredients were harmless should any portion be inadvertently swallowed. Obvious as this fact was, it would appear to be frequently forgotten, judging from the prescriptions which were sometimes seen.

All these objections to gargles in the adult obtained with still greater force in the case of children, in whom the act of gargling was in the majority of cases simply impossible. Gargles, therefore, should be employed only as emollient and antiseptic mouth washes, harmless ingredients being used. As a substitute Mr. Browne would recommend the more general use of mouth irrigations, sprays, lozenges, and, in the case of children, medicated confections.

In the discussion that followed, Dr. Dundas Grant said that there was one aspect of the gargling question which he thought would come up, to which we might attach at least a theoretical and also a practical value, which was that, in practising von Tröltsch's method, it was not altogether useless as a method of massage, and there was a school in which the massage of the throat was given a prominence which he thought was quite unnecessary, but still not to be despised.

He stated that he had seen some advantage from the employment of massage of the outside of the pharynx; possibly, also, the Eustachian tubes might be improved by the patient's practising at the same time von Tröltsch's method of gargling. The swallowing part of it was, he said, the most essential feature, and he thought that in subacute cases where a degree of congestion and thickening remained we might yet find it of some use, although it might be limited.

The Tri-State Medical Society of Iowa, Illinois, and Missouri.—The annual meeting will be held in Chicago, on April 7th, 8th, and 9th, under the presidency of Dr. Robert H. Babcock, of Chicago. The preliminary programme includes the following papers: A New and Practical Method of Opening and Dilating the Eustachian Tube, by Dr. Wellington Adams, of St. Louis; Chest Drainage in Empyema, by Dr. J. J. Brownson, of Dubuque, Iowa; Eye Symptoms in Brain Tumor, by Dr. James Moores Ball, of St. Louis; The Use of Patent Medicines, by Dr. G. W. Barr, of Quincy, Ill.; The Diagnosis and Surgical Treatment of Cancer of the Cervix, by Dr. G. Wiley Broome, of St. Louis; Points in Surgical Practice, by Dr. D. C. Brockman, of Ottumwa, Iowa; Pregnancy Complicated by Cancer of the Cervix, by Dr. A. H. Cordier, of Kansas City; The Surgical Treatment of Brain Tumor, by Dr. George W. Cale, of St. Louis; Fracture of the Pelvis Complicated by Pregnancy, by Dr. F. B. Dorsey, of Keokuk, Iowa; Gonorrhœal Rheumatism, by Dr. C. Travis Drennen, of Hot Springs, Ark.; Colles's Fracture, by Dr. H. C. Eschbach, of Albia, Iowa; Foreign Bodies in the Crystalline Lens, and The Ophthalmoscopic Findings in Raynaud's Disease, by Dr. R. C. Hetlebower, of Cincinnati; The Treatment of Unreduced Fractures of the Lower End of the Radius, by Dr. Webb J. Kelly, of Galion, Ohio; Anal Fistula, Peritonitis, Laparotomy, Recovery, by Dr. B. Merrill Ricketts, of Cincinnati; The Ætiological, Clinical, and Pathological Factors in the Diagnosis and Rational Classification of the Infectious and Toxic Diseases of the Peripheral Nerves, the Spinal Cord, and the Brain, by Dr. Adolph Meyer, of Worcester, Mass.; The Operative Treatment of Jacksonian and Focal Epilepsy as Illustrated by Selected Cases, by Dr. C. B. Nancrede, of Ann Arbor, Mich.; Some Recent Criticisms on the Serum Therapy, by Dr. Paul Paquin, of St. Louis; Self-infection in Surgical Cases, by Dr. Roswell Park, of Buffalo; Special Education as a Means of Treatment in Chronic Neurasthenia, by Dr. J. F. Percy, of Galesburg, Ill.; Remarks on a Partial Dislocation of the Axis, by Dr. Francis Reder of Hannibal, Mo.; The Local Treatment of the Eye, by Dr. D. S. Reynolds, of Louisville; Ulcerative Inflammation of the Cornea, by Dr. E. O. Sisson, of Keokuk, Iowa; Leucocytosis: its Relation to Modern Therapy, by Dr. T. O. Summers, of St. Louis; The Pathology of Cystic Tumors of the Ovary and of the Broad Ligaments, by Dr. W. W. Wathen, of Louisville; Dysuria in Women, by Dr. O. B. Will, of Peoria, Ill.; Pylorectomy in America, by Dr. Alexander H. Ferguson, of Chicago; Anæmia and its Relation to the Nervous System, with Suggestions as to Treatment, by Dr. D. R. Brower, of Chicago; The Relation of Fæcal Impaction to Appendicitis, by Dr. T. J. Shuell, of Parnell, Iowa; Flat-foot, by Dr. John Ridlon, of Chicago; and Conservative Surgery in the Treatment of Hæmorrhoids, by Dr. Joseph B. Bacon, of Chicago. Papers will be read (the titles to be announced) by Dr. J. M. Mathews, of Louisville; Dr. J. R. Ash, of Brighton, Ill.; Dr. Frank Allport, of Minneapolis; Dr. L. H. Dunning, of Indianapolis; Dr. John Punton, of Kansas City; Dr. R. Harvey Reed, of Columbus; Dr. J. J. M. Angear, Dr. Weller Van Hook, Dr. William A. Pusey, Dr. Arthur Edwards, Dr. Frank Billings, and Dr. Gustav Fuetterer, of Chicago; Dr. Emory Lanphear, Dr. Otto Sutter, Dr. A. E. Mink, Dr. G. H. Thompson, Dr. Harry Wells, and Dr. W. C. Ussery, of St. Louis. Dr. Nicholas Senn and Dr. John B. Murphy, of Chicago, will hold surgical clinics, and Dr. J. H. Etheridge and Dr. F. Henrotin, of Chicago, will hold gynæcological clinics.

The Therapeutic Value of Benzosol.—An article with this title, by Dr. J. Blake White, of New York, appears in the January number of the *Richmond Journal of Practice*. The author remarks that when benzosol is administered by the mouth it is not dissolved by the juices of the stomach, but the guaiacol is liberated in the intestinal canal by its more alkaline secretions, and is subsequently excreted by the kidneys with the benzoic acid. If it is desired that the remedy should exert its action high in the digestive tract, a more rapid absorption of it may be caused by giving it in combination with an alkaline water.

The great advantages of benzosol, says Dr. White, are its comparative freedom from odor or taste, which permits of its very general use in much larger doses than guaiacol or creosote, and its readiness of absorption, as shown by its detection in the saliva and urine within half an hour after it is taken. Digestive disturbance very rarely occurs from its administration, but if there is any it is only when the remedy is pushed beyond a drachm a day. Dr. White has prescribed it in a variety of conditions, and no ill effects have been observed, but the limit of dose mentioned has not been exceeded, while very beneficial effects in some instances have been realized from much more moderate doses continued for a reasonable length of time.

The most agreeable form of prescribing benzosol is that recommended by Walzer, in chocolate pastilles, with the addition of a little oil or spirit of peppermint, which he considers especially suitable for children or patients of fastidious taste. The powder may be taken upon the tongue, followed by a mouthful of some carbonated water, or appropriate doses may be prepared in capsules, which are very convenient for its administration.

In phthisis, Dr. F. Walzer considered benzosol a valuable substitute for creosote. In tubercular diseases there is no function which the physician more carefully watches than those of digestion or assimilation; hence a remedy which possesses all the desirable and beneficial qualities of guaiacol or creosote without their objectionable features must be accepted with much satisfaction. All that Bouchard and Somerbrodt have said in favor of creosote in phthisis may be equally urged for benzosol. Walzer asserts that the results in phthisis with benzosol are at least equal, if not superior, to those obtained from the use of creosote, and with the author its use has been decidedly more satisfactory, inasmuch as the same general and specific efforts may be expected without the consequent annoyances attributable to creosote or its more agreeable substitute, guaiacol. The cases under the observation of the author which have appeared to be most benefited by the benzosol have been those which manifested a marked catarrhal condition of the lungs in the early stage of phthisis, or such as are well advanced, with the formation of cavities and excessive expectoration. In these latter cases the patients have, in some instances, tolerated surgical measures and improved under treatment by intracavernous medication.

In the early stage of the hæmorrhagic type of phthisis benzosol has proved especially valuable, and the author is quite confident that, if it is administered in sufficient doses, the remedy may be expected to exercise a decided controlling effect on the hæmoptysis, probably by a direct styptic effect

through the circulation as well as in shortening the violent fits of coughing which constitute such a distressing symptom, and not infrequently precipitate hæmorrhage. The effectiveness of the remedy as a preventive of hæmorrhage is enhanced when it is combined with ergotine and strychnine.

In all forms of gastric and intestinal diseases no internal antiseptic has given the author more gratifying results than benzosol. Special advantage is obtained in fermentative disturbances of the intestinal tract due to delayed or imperfect assimilation, since the drug is not usually decomposed till it is acted upon by the alkaline secretions of the intestines.

The author's experience with benzosol in diabetes has tended to show its value in this affection. The quality and quantity of the urine are distinctly affected favorably. In some instances the sugar has entirely disappeared within a few weeks under the treatment, and, though the best results are to be looked for when the patient's diet is attended to, beneficial effects have followed the use of benzosol alone without restriction of the diet. Not only are evidences of good to be noted in the change of the condition of the urine, but the general health also responds under its favorable influence, as shown by increased appetite, improved digestion and assimilation, and resulting improvement in nutrition.

A Case of Cervical Rib.—In the *Boston Medical and Surgical Journal* for March 12th Dr. J. Collins Warren relates the following case: The patient, a married woman, thirty-five years old, supposed for a number of years that she had rheumatism, and for two or three years there had been much pain. The principal pain was near the middle of the right clavicle and extended down the arm and sometimes reached the lower end of the ulna. The power of the arm seemed to be diminishing, and the pain increased so that she was frequently prevented from sleeping. On examination, a bony tumor was observed behind the middle of the right clavicle, arising apparently from the first rib; overlying it was a large artery which at times appeared to give a sensation of pulsation to the whole tumor. The outer border of the tumor was particularly sensitive. On the opposite side of the neck a similar bony prominence was felt, but it was much smaller. A large rectangular flap was turned up, uncovering the whole region of the tumor, and after the fascia was incised a bony mass was observed, upon the inner side of which was the subclavian artery, and on the outer side the brachial plexus. On further dissection, the bony mass was found to be a rib articulating with the first rib by a facet situated a short distance behind the insertion of the scalenus anticus. The scalenus medius was inserted into the cervical rib. This rib was disarticulated and removed piecemeal nearly up to the point of its origin from the seventh cervical vertebra. The removal of the bone seemed to relax the brachial plexus, which had been somewhat stretched by the arching position of the bone. The wound healed by first intention, and the patient has experienced little or no pain since the operation and is recovering the use of the arm.

Although the occurrence of cervical ribs is not uncommon, says the author, cases in which they have given rise to symptoms are exceeding rare in literature. They are usually accidentally discovered, and possess only an anatomical and embryological interest. Gruber, of St. Petersburg, has described seventy-six cases, and Pilling, of Rostock, has increased the number to a hundred and thirty-nine. In only three of this large number did the cervical rib give rise to symptoms. Ehrich adds two cases from personal knowledge and five from literature, making ten cases.

Cervical ribs are second in frequency of occurrence to lumbar ribs. They have been found at all ages down to a six-months embryo. They occur oftener double than single. In Pilling's cases the proportion was thirty-seven to sixteen. They are always connected with the seventh cervical vertebra. They have a costal cartilage only in cases where they articulate with the first thoracic rib or with the sternum.

The connection with the first rib is usually with the bone itself, and may be bony or fibrous. It may be connected with the cartilage, and in this event the connection is fibrous.

In the first, or rudimentary, form the rib reaches no farther than the transverse process of the vertebra. In the second, or more developed, form the rib extends beyond this point. In the third form the rib extends far beyond this point, even forward as far as the cartilage of the first rib, and unites by a ligament or by its end with the first rib cartilage. In the complete form the cervical rib resembles a true rib and has a cartilage uniting with that of the first rib.

With regard to the relation of the subclavian artery to the cervical rib, says Dr. Warren, the artery always runs over it when the rib is of sufficient length, otherwise the artery runs in front of it and over the first rib. In cases where the rib has caused symptoms due to pressure on the subclavian artery and brachial plexus, it has seemed to grow forward on to them and cause pressure symptoms.

The symptoms produced by cervical ribs, he says, may be classified as local and functional. The second group, functional symptoms, may be also divided into two groups: 1. Symptoms due to pressure on the brachial plexus. 2. Those due to pressure on the vessels.

The local symptoms are: 1. A bulging, instead of the normal depression of the parts, just behind the posterior border of the sterno-mastoid muscle and above the clavicle. 2. A visible and tangible superficial pulsation high up in the supraclavicular region. This may be absent if thrombosis has taken place, or if, as often happens, the subclavian runs in front of and not over the rib. 3. The presence of a smooth, immovable tumor of bony hardness in the supraclavicular region.

The functional symptoms are: 1. Disturbance of the circulation, such as aneurysm believed to be due to the sharp bending of the subclavian, or compression symptoms, such as thrombosis, attended with pallor and coldness of the arm, with perhaps gangrene of the fingers and muscular atrophy. This may be in part due to the compression of the plexus. 2. Symptoms due to pressure on the brachial plexus are motor and sensory disturbances, such as pareses, severe neuralgic pain and paræsthesia, numbness, etc.

Other bony tumors in the same region, for example, existing from a first rib, may produce the same symptoms, though they are usually less marked.

The prognosis, says Dr. Warren, after operation is good.

The Western Society of Eye, Ear, Throat, and Nose Surgeons.—At a meeting to be held in Kansas City on April 9th and 10th to organize a society of eye, ear, throat, and nose surgeons, the following programme will be carried out: Address of Welcome, by Dr. C. Lester Hall, of Kansas City; Response, by Dr. R. S. Black, of Kansas City; Two Cases of Opening of the Lateral Sinus for the Removal of an Infectious Thrombus, with Recovery in One Case, by Dr. C. Barck, of St. Louis (discussion to be opened by Dr. William Scheppegrell, of New Orleans); The Ocular Manifestations of Hereditary Syphilis, by Dr. T. C. Evans, of Louisville (discussion to be opened by Dr. Le Roy Dibble, of Kansas City); When should the Cautery be Used? by Dr. William C. Pipino,

of Des Moines, Iowa (discussion to be opened by Dr. W. L. Dayton, of Lincoln, Neb.); Empyema of the Frontal Sinus, with a Report of Cases, by Dr. C. P. Ambler, of Canton, Ohio (discussion to be opened by Dr. F. B. Tiffany, of Kansas City); The Use of Peroxide of Hydrogen in Diseases of the Throat, the Nose, and the Ear, by Dr. William Scheppegrell, of New Orleans (discussion to be opened by Dr. J. W. Gaines, of Kansas City); A Case of Asthma Due to Nasal Obstruction and to Adenoids of the Pharyngeal Vault, by Dr. W. W. Bulette, of Pueblo, Col. (discussion to be opened by Dr. J. E. Logan, of Kansas City); Tinnitus Aurium, by Dr. J. W. May, of Kansas City (discussion to be opened by Dr. Adolf Alt, of St. Louis); Panophthalmitis Caused by Leucoma Adhærens (Anterior Synechia), and the Treatment of Anterior Synechia, by Dr. L. A. Lebeau, of St. Louis (discussion to be opened by Dr. J. E. Minney, of Topeka, Kan.); Tuberculous Laryngitis at High Altitudes, by Dr. B. P. Anderson, of Colorado Springs, Col. (discussion to be opened by Dr. D. Milton Greene, of Grand Rapids, Mich.); Why Deafness Afflicts Some and not All who Suffer from Diseases of the Upper Air-passages, by Dr. W. F. Strangways, of Flint, Mich. (discussion to be opened by Dr. G. A. Wall, of Topeka, Kan.); Purulent Brain Infection from Otitis Media, by Dr. B. C. Fryer, of Kansas City (discussion to be opened by Dr. C. Barck, of St. Louis); Subjective Sensations, by Dr. W. E. McVey, of Topeka, Kan. (discussion to be opened by Dr. John C. Smith, of St. Louis); What Operation for Senile Cataract should the Beginner Select? by Dr. J. H. Thompson, of Kansas City (discussion to be opened by Dr. T. C. Evans, of Louisville); The Clinical Examination of Deaf-mutes, by Dr. S. T. Walker, of Jacksonville, Ill. (discussion to be opened by Mr. H. C. Hammond, of Olathe, Kan.); The Usual Head Formation with Eye, Nose, and Throat Complications, by Dr. H. W. Woodruff, of Joliet, Ill. (discussion to be opened by Dr. R. S. McGee, of Topeka, Kan.); Adenoid Vegetations of the Vault of the Pharynx, by Dr. C. E. Clark, of Kansas City (discussion to be opened by Dr. M. F. Jarrett, of Fort Scott, Kan.); Errors in the Literature on Javal's Ophthalmometer for the Measure of Astigmatism, by Dr. G. W. Grove, of Kansas City (discussion to be opened by Dr. W. A. Shoemaker, of St. Louis); The Present Status of the Physiological Anatomy of Vocalization and of Phonation, by Dr. Edward H. Schaefer, of Kansas City (discussion to be opened by Dr. H. W. Loeb, of St. Louis); Eye Affections as Related to Nasal Diseases, by Dr. George E. Bellows, of Kansas City (discussion to be opened by Dr. E. E. Hamilton, of Wichita, Kan.); and Organization a Protecting Factor for the Up-to-date Physician, by Dr. J. D. C. Hoit, of Yates City, Ill. (discussion to be opened by Dr. B. P. Anderson, of Colorado Springs, Col.). Papers will also be read by Dr. H. W. Loeb, of St. Louis, Dr. A. B. Farnham, of Milwaukee, Dr. Robert Leavy, of Denver, and Dr. Adolf Alt, Dr. William Porter, and Dr. John A. J. James, of St. Louis.

A New Preparation of Cannabis Indica.—The *Therapeutische Wochenschrift* for March 1st mentions a new watery fluid extract of cannabis indica termed *extractum cannabis indicæ aquosum fluidum*, and states that, according to R. Cowan Lees, it possesses all the beneficial properties of the plant, but does not give rise to that state of intoxication, bordering on poisoning, which follows the use of even medium doses of the alcoholic preparations. It has no effect on the secretion of bronchial mucus, and consequently in suitable cases it seems more efficient than opium, and it has a manifest anodyne and hypnotic effect in pulmonary affections. Lees has observed the best results from its use in tuberculous disease of the lungs, in which it materially alleviates the paroxysms of coughing, while at the same time it exerts the precious stimulating and cheering effects of cannabis indica. It is, furthermore, of value in digestive disturbances connected with constipation and as a soporific in the diseases of children. The medium dose for an adult is from thirty to sixty grains; for a child less than a year old, from fifteen to thirty one-hundredths of a grain for each month of age; for older children, from a grain and a half to three grains for each year of age.

Scopolamine Hydrobromide in the Treatment of Plastic Iritis.—At a recent meeting of the Section in Ophthalmology of the College of Physicians of Philadelphia, Dr. Charles A. Oliver read a paper in which he showed that for quick and active measures, which are so necessary in the incipient cases of this form of disease and during the early stages of inflammatory reaction, the drug is very important; but where prolonged use is necessary, as in many cases of the chronic form of the disease with subacute exacerbations, the good effect does not seem to be lasting. For these reasons, he has learned empirically to depend upon the drug where prompt action is necessary, but where more permanent effects are desired he alternates its use with that of atropine. From the doses in which he had employed the drug, he had never seen any symptoms of poisoning, although in several of the cases in which he had used it freely there had been, at times, giddiness, inco-ordination of movement, and drowsiness. In regard to the question of intraocular tension, he intended to perform a series of experimental researches and to make a relative study of the other mydriatics with which the drug has been usually thought to be associated or, in fact, considered identical.

Apenta Water.—We recently published an analysis of this new Hunyadi water. Since then some experience with its employment as an aperient warrants our saying that it is gentle but satisfactory in its action and less unpalatable than many of the purgative waters of its class. The Apollinaris Company, by whom it has been introduced, seem to have made it a point to have the product always of the same strength, which, of course, is a matter of great importance. The water is remarkable for its richness in magnesium sulphate, exceeding that of all other bitter waters. The Apenta water was formerly known as Rákóczy water.

The New York Academy of Medicine.—At the last stated meeting, on Thursday evening, the 19th inst., a paper on The Surgical Treatment of Harelip and Cleft Palate in Children was read by Dr. D. H. Goodwillie and discussed by Dr. Wyeth, Dr. Abbe, Dr. Gerster, and Dr. A. M. Phelps.

At the next meeting of the Section in Laryngology, on Wednesday evening, the 25th inst., Dr. J. M. Barton will read a paper entitled The Diseases of the Larynx, of the Bronchi, and of the Lungs treated by Intratracheal Injections (to be discussed by Dr. C. C. Rice, Dr. Joseph Muir, and others). Cases will be presented and new instruments and apparatus exhibited.

At the next meeting of the Section in Obstetrics and Gynæcology, on Thursday evening, the 26th inst., Dr. J. Milton Mabbott will read a paper entitled Three Warnings of Interest to Obstetricians. Cases will be reported and specimens and new instruments exhibited.

The Phonendoscope.—The *Lancet* for February 29th gives an account of a new instrument to which the name phonendoscope has been given by the inventors, Professor Eugenio Bazzi and Professor Aurelio Bianchi. For this invention, says the writer, the statements advanced in support of its superiority over the stethoscope are startling. It is stated

that the phonendoscope is useful for hearing the following sounds: 1. The sound of the respiratory organs, of the circulation of the blood, and of the digestive organs in the healthy body as well as in the sick subject. 2. The sounds made by the muscles, joints, and bones. 3. The sounds in the matrix at the time of pregnancy and the noise provoked by the fœtus. 4. The sound of the capillary circulation. 5. The slightest sound produced in any diseased condition of the body; hence it is possible to draw on the body the dimensions, the position, or any alteration in the position of the various organs and of the fluids which have gathered in the most important cavities of the body. 6. The sounds in the ear, the eye, the bladder, the stomach, and the intestines. We can only say, says the *Lancet*, that if all this is true, then the instrument is indeed an acquisition, and its employment will call for the expansion of treatises on auscultation to new fields of research. Perhaps to ascertain all the sounds above enumerated requires prolonged and special training in the use of the phonendoscope, but all that we have been able to do in a comparatively brief acquaintance with the instrument is to carefully test its conducting powers in comparison with those of the ordinary stethoscope. This trial has resulted in a verdict in favor of the new invention as a superior conducting medium of the sounds of the heart and lungs, normal and abnormal; although even this statement must be guarded by the admission that if the observer is not careful he is apt to get confused by adventitious sounds created by the instrument itself. Its best service will probably be found in the detection of faint murmurs and in the readiness with which the heart sounds can be heard through several layers of clothing.

The instrument consists of a circular flat metal box or tympanum having on one surface two apertures for the attachment of the rubber ear-tubes, while the other surface is formed by a thin disc which is readily thrown into vibration. The best results are obtained by simply applying this disc to the surface to be examined. By an ingenious contrivance a second disc can be superposed upon this one and a vulcanite rod attached to the former, so that the area of auscultation may be extremely circumscribed. The conduction of the sounds is only slightly diminished by the use of this rod, which thus combines the principle of the solid stethoscope with that of the tympanum. The rod furnished with the instrument is about two inches in length, but it is stated that there are other rods of various lengths to enable the "phonendoscopist" to receive sound-vibrations from the natural cavities which communicate with the exterior of the body. Altogether, says the *Lancet*, we consider the instrument highly ingenious, carefully and compactly constructed, useful as an aid to auscultation, but yet not likely to entirely supersede the use of the stethoscope. It may also be found useful in class demonstration, since it would be easy by means of branched tubes to enable several persons to listen at the same time.

The Hygiene of the Face.—The March number of the *Edinburgh Medical Journal* contains an abstract of an article from the *Medical News and Circular* in which the writer remarks that to a very large proportion of the human race in civilized countries the face is, under the designation of the complexion, the subject of considerable and painstaking interest. Even those most exempt from vanity would prefer to have a physiognomy not readily identifiable by a more or less symmetrical crop of pimples; and a congested nose is not regarded as a thing of beauty, even in an omnibus driver. Yet, he says, in spite of this general feeling in favor of a normal complexion, ignorance and carelessness between them wreak havoc, and it is the exception to meet with cheeks that have seen more than twenty summers which do not betray traces of ill-treatment. Apart from indigestion and constipation—two potent factors in the ruin of a naturally healthy complexion—there are various forms of mismanagement which conduce to blotchiness and pimply deformities. Among them must be ranked the practice of washing the face with hot water, a widespread form of self-indulgence in cold weather. The hot water, especially when re-enforced by a course of unduly alkaline soap, removes an unduly large proportion of the natural fat of the skin, leaving it with a roughened surface, which is very apt to excoriate or "chap," and requires more frequent washing to keep it clean, owing to its catching the dust. Nothing, says the writer, probably does so much to age the skin as the frequently repeated ablutions with hot water, and this may explain why the dainty French woman prefers to smear off the grime with the corner of a handkerchief steeped in glycerin, knowing by experience that good, honest soap and water will, in the long run, prove detrimental to the preservation of a healthy skin.

Severe Hiccough Cured by Inhaling Fumes of Burnt Paper.—In the *Indian Medical Record* for February 1st Mr. Ashutosh Bandhapadia, V. L. M. S., of Kamardanga, Calcutta, relates the following case: He was called to see a young Hindu lad who was suffering from an attack of remittent fever. The administration of the medicine which had been prescribed for him the day before had caused free purgation accompanied by a bloody discharge. The author found him quite prostrated, with the voice hoarse, the respiration jerky, the pulse imperceptible, and the temperature below 96° F. There was violent hiccough, with thirst, and the body felt clammy.

The author burned some paper and made the patient inhale some of the smoke, which stopped the hiccough entirely. A mixture containing chlorodyne, spirit of chloroform, tincture of digitalis, and French wine was prescribed. This was followed by a hypodermic injection of spiritus ætheris. After half an hour or so the pulse was perceptible, though not very distinct. At 8 A. M. on the following morning the temperature was 103° F. and the pulse was regular. On examination no pain over the liver or over the spleen was found. At 6 P. M. the temperature was 106·8° F. About half an hour after the rise of temperature the patient had a stool, which consisted only of mucus and blood, about a pint in quantity, after which he fell into a state of extreme prostration. Milk with thirty minims of wine was given every five minutes, and a mixture containing diluted sulphuric acid, spirit of chloroform, and tincture of digitalis was ordered to be given every half hour. Next morning the temperature was 102·6° F., and the patient progressed favorably. On the 10th the temperature was normal, the patient continued very well, the temperature did not rise again, and he made a speedy recovery.

Tannin and Camphor in the Treatment of Erysipelas.—Sperandino (*Gazz. degli osped.*, 1895, No. 80; *Dtsch. Med.-Ztg.*, February 24, 1896) employs the following solution:

Tannin	2 parts;
Camphor	3 "
Sulphuric ether	15 "

The erysipelatous area is painted with this solution every hour or two, proceeding from the surrounding healthy skin toward the centre of the patch. At first there is some burning, which is due to the evaporation of the ether. In a short time, however, a crust forms on the affected skin, the swelling goes down, and in a few days the cure is complete.

Original Communications.

ON THE TOPICAL TREATMENT OF ACNE*

By EDWARD BENNET BRONSON, M. D.

In introducing to your attention a topic so trite as acne, I hasten to disclaim any expectation of revealing to you some new and masterful scheme for the cure of this very common malady. It is my modest hope, rather, that in presenting the results of my own study and experience, I may provoke a comparison of our views, and so incidentally, perhaps, evoke a modicum of that frictional heat without which the crucible of experience evolves little result that is either definite or durable.

Every physician here has treated acne, and doubtless each has his own theory of what are the most essential indications to be met, and perhaps each one has some special method by which he believes the desired end may be best achieved. That some local treatment is desirable is very generally admitted, but I am under the impression that the opinion most generally prevails that systemic treatment is of greater importance and should be made paramount. The proposition for which I shall contend is that general treatment should be regarded rather as accessory and incidental to measures that are direct and topical. My reason for this position is based primarily on the belief that acne is essentially a local disease, not only in its definite location, but in the essentially local causation of the process; and, secondly, my own experience with topical measures, affording me as it has an *argumentum ex juvantibus*, has tended to confirm me in this same belief.

But before we begin to argue we should first agree as to what acne is and what it is not. Inflammatory disease of the sebaceous follicles, even though accompanied with comedones, does not define it. The so-called acne rosacea, acne cachecticorum, acne varioliformis, acne bromata, acne iodata, and acne picealis do not answer to the definition of true acne and therefore are misnomers. If we call the eruption when composed simply of comedones acne, then it is not even necessarily an inflammatory disease. True acne is a disease pertaining to a certain period of life, affecting the sebaceous follicles in certain special areas of the skin and characterized more especially by a peculiar mode of development and by pathological changes which are typical in character and which definitely distinguish it from all other forms of disease of the sebaceous follicles.

It occurs almost exclusively between puberty and maturity. It is practically, then, a disease of adolescence. It may be prolonged into maturity, and it is possible that it may precede puberty, but it is equally certain that many of the disorders occurring very early or late in life which have been commonly regarded as acne have an entirely distinct nature and should not be confounded with the disease we are considering. Its chief site of predilection is the face, and by extension later may affect the shoulders, chest, and back. Its occurrence in the face corresponds to the developing period of the beard in the male, and in both sexes to a period of augmented activity in the pilo-sebaceous system generally, a period of transition which is always a critical period in any organ concerned during which that organ is peculiarly liable to disorder and disease.

The first and most important of the pathological changes in acne is a local hyperkeratosis, the effect of which is to cause the development of a peculiar body within the follicle, which body is known as the comedo. This is by no means simply a plug of sebum, but a product that is rather complex both in structure and content. It consists of an elongated, barrel-shaped body constricted at its outer extremity or "head," which appears upon the surface as a dark or blackish point, of largest diameter in the middle and tapering off at the lower end. Besides sebum it contains epidermic cells, stratified or in globe-shaped masses, usually a number of lanugo hairs coiled up or twisted together, a variety of micro-organisms in peculiar arrangement, and the whole inclosed in a mantle of stratified corneous cells. This mantle envelops the entire body of the comedo, except its lower extremity, and in the older formations this latter is inclosed also. Apparently the hyperkeratosis at the orifice of the follicle first occludes the opening and, extending down the sides, gradually envelops the sebum and other retained products. The pressure of the accumulating secretion below causes finally a folding of the vertical layer of corneal cells at the orifice of the follicle, so that here they assume a horizontal position and still more effectually imprison the comedo in its bed. It is in these horizontal cells that the discoloration occurs, which commonly has been attributed to an accumulation of particles of dirt, but, according to Unna, is due to a physiological color change in the horn cells analogous to that seen in the horny plates of ichthyosis or in other forms of colored horn tissue. The arguments in support of Unna's position seem conclusive, and, so far as I know, have not been controverted.

Bacteriological study of the contents of the comedo has revealed the presence of abundant parasites. The occasional presence of a follicular acarus, the so-called *Demodex folliculorum*—occurring as it does only exceptionally, and being, so far as known, only an accidental concomitant of the disease without any connection whatever with its origin—need not here be considered; but the flora of the comedo, there is reason to believe, plays a more important part. Unna,* who has made the most exhaustive studies of the bacteriology of acne, attaches so much importance to the parasitic element as to class acne among infectious diseases. The results of Unna's investigations have been fully corroborated by his pupil Hadara,† of Constantinople, working independently and without previous knowledge of Unna's findings. According to these observ-

* Read before the Society of Alumni of Bellevue Hospital, February 5, 1896.

* *Lehrbuch der speciellen pathologischen Anatomie* von Dr. Johannes Orth. Achte Lieferung (Ergänzungsband, II. Theil). Hautkrankheiten, von Dr. P. G. Unna.

† *Monatshefte f. prak. Derm.*, 1894, 12, p. 572.

ers, three kinds of micro-organisms occur in the comedo: First, in that portion called the "head," lying near the surface, the diplococci of eczema seborrhoicum are sometimes found, but they are not always present, and, moreover, they occur in the comedones of other follicular troubles that are not true acne. They are not regarded as essential. Secondly, in the same upper portion of the comedo, though a little less superficially situated than the cocci, there occur in the older comedones large flask-shaped bacilli which correspond to the cocci of Malassez. They are also found in pityriasis capitis, in eczema seborrhoicum, and often also in the scrapings from a greasy forehead. They are regarded as of the nature of saprophytes, but not directly related to the ætiology of acne. Finally, in the body of the comedo, chiefly in its fatty parts, in a central cavity at the axis, or in cavities formed in the inner lamellæ, though rarely in the outer portions of the mantle, a multitude of very small bacilli are found arranged in bundles or irregularly distributed and imbedded in a glœa. They are said to be invariably present, and are believed by Unna to be the most characteristic factor and the most essential element in the disease.

Whatever opinion may be held concerning these bacilli as a causative factor in the production of the comedo, their invariable presence would certainly seem to imply that they have some ætiological bearing upon the course of the disease, and more especially in the stage of inflammation and suppuration. It is a remarkable fact that in all Unna's careful investigations the ordinary pus germs were never found in the acne pustule. When the suppuration began superficially in the form of an impetigo, as it often does, diplococci, such as occur in the head of the comedo and corresponding to those present in eczema seborrhoicum, were found in abundance, both in the fluid of the pus and in the leucocytes, but no staphylococci. When the suppuration took place in this way the comedonal mantle was usually intact and completely closed the lower extremity; but when the comedo was still open below, the suppuration began lower down, often in the sebaceous gland or in the hair follicle, and then only the small bacilli were present. In both cases, according to Unna, the inflammation is much oftener intrafollicular than circumfollicular. Other authorities—such as Leloir, for example—have held that the inflammation at its inception is generally circumfollicular. Assuming that Unna's view is correct in this, the sharp limitations in area of the inflammation in acne, showing as it does a marked contrast in this respect to the diffuseness of a phlegmon or a follicular furuncle, is easily accounted for. Moreover, it lends a more favorable aspect to the efficacy of topical treatment.

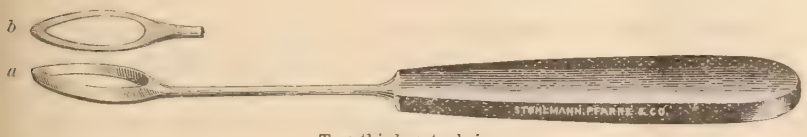
The indications for treatment, so far as they may be discerned in the pathological anatomy, point clearly enough to local measures as the most rational mode of relief. But there are in acne, as in every irritative disease, predisposing and accessory as well as determining causes that call for consideration. In this instance the predisposing cause is age. Acne may justly be considered as a developmental disease—a disease the predisposition to which is incidental to the developmental changes of adolescence. But in this connection there is only one means of relief suggested, and that is homœopathic. For that condition of which age is the cause the remedy is more age—a prescription with which few patients, however, are content.

The suggestions afforded by the accessory causes are more practical. There are many disorders of health, more or less general and more or less transitory, that have an undoubted influence over acne. On these an immense amount of attention has been bestowed. Naturally by the laity they are the only causes recognized. To one or another of them is the annoying eruption ascribed as its sole and sufficient cause. It is error of diet, indigestion, dyspepsia, constipation, menstrual disorder, sexual continence, incontinence, bad habits, faulty nutrition, anæmia, plethora, or anything else that happens to be wrong in the economy at the time of the acne's appearance. There is no doubt that any one or more of these ailments may influence the course of acne as they may that of almost any other disease. Such ailments produce more or less disorder of the whole system, and the systemic disorder seeks out particularly the *loci minoris resistentiæ*. Thus any local inflammation is almost always aggravated by a poor or deranged condition of the health, and this influence is capable of converting a latent or subacute condition into one that is active and acute. A foreign body long dormant in the tissues may, under the incitement of general disturbance, suddenly awaken the environment to recognize the intruder and to resent the intrusion. In acne for a long time the follicles seem to acquiesce in the infringement upon their function. Indifferent to their retained products and motley inhabitants, they remain quiescent as a village of prairie dogs, owls, and rattlesnakes; but let some general derangement affect the economy at large, and there will be a sudden onset of inflammatory excitement in the follicles, which, though primarily due to exhausted tolerance within, is precipitated by the disturbance from without. The elements of disorder were already there. It was acne before the general disturbance, and is only acne afterward. To abate the general trouble, much as it may assist the cure, does not remove the factors most essential to the disease.

All authorities agree that the folliculitis of acne is chiefly dependent on the production of the comedo, though they differ as to what produces the comedo. Virchow regarded it as due to an atony of the follicle, with inability to expel its contents. Biesiadecki attributed it to an obstruction caused by fine lanugo hairs which, instead of growing out through the pilo-sebaceous follicle, were deflected downward toward the gland and, accumulating there, obstructed the escape of the secretion. Leloir and Vidal refer the trouble primarily to the sebaceous gland, its disordered function giving rise to a sebum of greater consistence than is normal, and as a consequence the product remains as a semisolid body sticking in the follicle. None of these views, however, explains the process so satisfactorily as that which refers it to a primary hyperplasia of the horn cells in and about the sebaceous follicles—a morbid and excessive growth of horny tissue incidental to the physiological transition of the individual from youth to maturity. At what period of acne the parasitic element

comes into play is not definitely determined. It would seem more rational to regard it, at least at the start, as an accidental concomitant of the comedo, but which ultimately takes a sufficiently prominent part to shape the subsequent course of the affection in a typical manner and virtually convert it into an infectious disease.

The prime indications for the treatment of acne as implied above require: 1. Reduction of the hyperkeratosis. 2. Removal of the comedones. 3. Disinfection of the follicles, and finally the employment of such local or general antiphlogistic measures as the case may require. Of these objects, the first two are accomplished by mechanical means, the first three by topical measures, while the last may require both topical and general treatment. To particularize the methods by which this treatment is to be carried out is perhaps superfluous. It is rather the principles of treatment on which I would insist than upon special ways and means of its accomplishment. In mentioning my own methods it is rather by way of illustration than for the reason that I presume them to be any better than yours. A workman, after all, is at his best with his own tools and appliances so long as they are adapted to the desired ends. I begin with the curette—to me an indispensable implement in the management of acne—and show you here a form which has long served me well. It has an elongated olive-shape, with a large fenestra that is easily cleaned, and the edges, which are but slightly curved, are rather sharp. The curettes commonly used are too small, and answer for little more than one follicle at a time. This instrument, which is manipulated in much the same manner, doubtless, as was the ancient Roman strigil, is suitable both for the face and the broad areas of the back and chest. In using it, the skin is first put on the stretch, and



Two thirds actual size.

the edge is then swept with rapid free-hand strokes over the affected surface, with the effect of planing off the corneous elevations, which can always be felt as little prominences above the niveau wherever comedones are, also clipping off the tips of many pustules and removing at once the horny cap that seals the orifices of the distended sebaceous follicle. By this means is accomplished in an instant what would be less thoroughly effected by applications of salves, soaps, hot water, or steam for days or weeks. While this manipulation removes both the superficial keratosis and to some extent also the contents of the follicles, to thoroughly remove these latter each follicle must be treated separately. Most of the comedo extractors in use are of a cylindrical form that has been developed from the simple device of the watch key, and act by pressing equally on all sides of the follicle whereby the contents are expelled. A very good modification is Clover's comedo presser, which is cup-shaped, with a little hole in the centre. Fox's instrument, which in many cases is serviceable, is in the form of a little scoop with a notch at the edge, which is pressed against the follicle and at the same time is given a circular motion around the follicle. The device which I almost invariably employ forms a part of the curette or strigil which I have just shown you. It is at the back of the instrument at its tip where the edges of the fenestra form an acute angle. The inner edges are abrupt, while the outer edges are rounded off with a sufficiently broad surface of metal between to permit considerable pressure without bruising or abrading the skin. To use the instrument as a comedo presser it is turned with its back to the surface so that the follicle to be emptied shall appear at the centre of the fenestra, into which, by making some pressure, the skin slightly bulges. It is then drawn down very slowly till the comedo is just at the apex of the angle, and with some increase of the pressure an easy delivery results and the comedo is brought into the world. By this manœuvre it is often possible to empty several follicles at one stroke. In case there are unopened pustules or comedones that are unusually refractory, a slight slitting of the top and rim of the follicle facilitates the expulsion. In still more refractory cases, where the comedones are especially dry and the horny tissue sealing up the orifices is unusually dense, it is well, before attempting a thorough removal of the comedones, to apply some keratolytic preparation in order to soften the horny epidermis, and for this purpose the following combination is useful:

℞ Vinegar..... 2 parts;
Glycerin..... 3 "
White bole or kaolin..... 4 "
M.

Upon the completeness with which all the follicles are emptied will depend very largely the success of the treatment. The location of the affected ones is detected as much by touch as by sight. Whenever the palpating finger encounters a definite point of resistance, whether it be a minute papule not larger than the head of a pin or a tubercle or nodule, there is most likely an occluded and distended follicle. In acne indurata, though there may be little or no sign of inflammation on the surface, when the little nodule is pressed between the thumb and finger the surface blanches, betraying the presence of secretion or pus within. In this case a rather deep incision is necessary before pressing out the contents. It is best made with a triangular double-edged knife, such as Jaeger's straight keratome. When the contents are not easily pressed out, as is rarely the case, however, they may be scooped out with a very small curette introduced through the incision into the follicle; but inasmuch as the lining membrane of the follicle, though distended, may be still intact, and as it is desirable, if possible, to keep it so, the curette should be used with caution. On the other hand, when the suppuration is diffuse, as it sometimes is, one follicle often communicating with another, I consider deep curetting as almost indispensable. It is rarely possible, of course, to operate at one sitting on all the follicles requiring treatment. It takes time to correct a bad habit of the body as well as habit of mind.

Some lesions will be overlooked, some in process of formation will betray themselves later, some once operated on may fill again and again become occluded. But relapses will be less and less frequent, depending on the thoroughness with which these mechanical measures are carried out, and also on the attention paid to those other measures to which we next proceed.

After the mechanical treatment comes disinfection. Though this may be partly intrusted to the patient, a very important part devolves upon the physician before the patient leaves his chair. As soon as we have finished with the curette and comedo presser the skin affected should be well bathed with bichloride of mercury either in a solution of 1 to 1,000 or in a one-per-cent. bichloride soap with a sufficient amount of water. If there are many pustules, before the bichloride wash, sop on peroxide of hydrogen or the three-per-cent. pyrozone. In using either of the two latter, however, be careful to avoid the eyebrows or borders of the hair, which might otherwise be discolored. For the worst places a still more effectual disinfection can be made by introducing some moderately strong germicide directly into the interior of the follicle. I have found that this may be very conveniently done by means of a small quill toothpick whittled down so as to have a fine, tapering, flexible end though not too sharp at the point. This is first dipped in the disinfectant—for example, a twenty-five- to fifty-per-cent. solution of carbolic acid in glycerin—and is then carried to the bottom of the emptied follicle. For the larger pustules of acne indurata a tiny wisp of cotton may be twisted about the tip of the quill.

For the disinfectant treatment that the patient carries out at home I rely almost exclusively on two drugs—namely, sulphur and resorcin. For a few days, or occasionally, a bichloride soap may be advisable, as well as lotions of pyrozone or peroxide of hydrogen, and special remedies may now and then be required to meet special indications; but in routine treatment for disinfectant purposes it rarely becomes necessary to prescribe other remedies than the two mentioned. The sulphur is most suitable for cases characterized by marked suppuration, and it furthermore seems to have some effect in keeping the follicles open. The resorcin is known to be a germicide for the diplococci of eczema seborrhoicum and is probably for the acne bacilli as well. It has, moreover, a certain control over hyperæmia, and is therefore particularly adapted to those cases of acne in which the latter is a prominent feature, as, for example, when in young adults it is associated, as often happens, with rosacea. I am under the impression that resorcin, moreover, has some effect to tighten up the follicles after evacuation of their contents. For these reasons, in the majority of cases, the earlier prescriptions call for sulphur and the later ones for resorcin. For the employment of sulphur I have found nothing more satisfactory than the so-called *lotio alba*, which consists of a drachm each of potassium sulphide and sulphate of zinc in four ounces of rose water, and the resorcin I use in a three- to four-per-cent. solution in water, or in alcohol (or cologne) and water. These lotions should be applied rather frequently, at least at first—that is, from three to five times a day. If the disease does not then abate it is not to them I charge the fault so much as to want of thoroughness in the manipulations first described.

Under antiphlogistic measures must be included in this connection all such as tend in any way to counteract inflammation. Means designed to relieve any reflex irritation that is liable to affect the course of the disease and render it more inflammatory becomes for the acne an antiphlogistic measure, and the same might be said of the treatment of almost any form of departure from general health which tends to aggravate the local disease. But such methods of treatment I shall leave to others to particularize. Certain it is there is no specific internal treatment for acne. I shall only refer to the direct and topical means of relieving inflammation. During the course of the mechanical treatment, or longer, the patient should be directed to apply each night on going to bed, and perhaps oftener, some emollient and healing salve. I know of none better than that of Lassar, consisting of oxide of zinc, starch powder, and vaseline. It is a desiccating ointment that does not macerate the skin and so increase its vulnerability. It is somewhat unpleasant to use because difficult to remove, but with vaseline can with a little care be rubbed off in the morning. Resorcin, inasmuch as it reduces hyperæmia, is also an antiphlogistic remedy. Dusting powders, such as talcum, are useful, and I do not entertain the fear often expressed that there is danger of their clogging up the follicles. As we have seen, the occlusion of the follicle is effected by a process quite independent of the accumulation of extraneous matter. The use of hot water or steam, though doubtless it has some effect in quelling inflammation, has been, in my opinion, somewhat overrated as a remedy for acne.

Such is a sketch of the topical treatment of acne—the sort of treatment, however it may be modified, elaborated, and improved, which I believe, for reasons already given, to represent the radical treatment. It is a sketch merely, for it was my design only to illustrate a general plan of treatment by which the chief indications of the disease might be met. It is far from including all the remedies which are useful and appropriate in this disease. There are few diseases indeed that have given such wide scope to the ingenuity and fertility of the prescriber as acne. But to be armed with an array of acne prescriptions, however formidable, is but a poor equipment for successful management of the disease. With a definite comprehension of what acne is and what the essential conditions are that require to be altered, the remedies suggest themselves, and the mere form of the prescription becomes a matter of little significance.

Paralysis of Accommodation treated with Behring's Antidiphtheritic Serum.—Schmidt-Rimpler (*Ctrlbl. f. prak. Aug.*, December, 1894) has treated three cases of post-diphtheritic paralysis of accommodation by injections of the serum under the skin of the breast, and these were never followed by any general disturbance. He used an ordinary Pravaz syringe. The cases healed much more rapidly than usual, and the speech, which had been affected, was markedly improved.

MOTOR DISTURBANCES OF THE STOMACH.*

By J. KAUFMANN, M. D.

The group of morbid phenomena caused by pathologico-anatomical alterations in the stomach is generally regarded as comparatively small; it comprises the various forms of gastritis, ulcer, carcinoma, and ectasia of the stomach. In the majority of cases, however, in which the activity of the stomach is disturbed there is said to be an absence of anatomical changes, or at least they are not so marked in character as those named above. In all such cases, therefore, it is assumed that merely functional disturbances exist.

The enumeration of these functional disturbances takes up considerable space in the modern treatises upon diseases of the stomach, and justly so. There is less justification, however, for setting apart isolated functional disturbances, such as hyperacidity, the so-called supersecretion, as diseases *sui generis*. Disturbance of function is nearly always merely a symptom. The possibility that it may also occur as an independent neurosis it is not my intention to dispute; but if such a limitation of the morbid pictures is to be well founded, the results of the examination of the contents of the stomach by modern methods should be compared with the findings in the cadaver far more frequently than has hitherto been done. Whenever such investigations have been made in recent times, it has been found that anatomical alterations of the gastric mucosa are more manifold and decidedly more frequent than has been stated in the works above referred to. This standpoint finds its most ardent advocate in Hayem. The results he obtained in the cadaver have been well confirmed in a paper recently published by Paul Cohnheim, who examined pieces of fresh mucous membrane derived from irrigations of the stomach at Boas's clinic. These and other investigations prove that the recent strict limitation of the term gastritis to the grave forms, especially those associated with interstitial alterations, is absolutely devoid of foundation; that, on the contrary, various purely parenchymatous alterations of the gastric mucosa are met with, and that the latter in particular are also observed in cases in which our present methods point to the diagnosis of a neurosis with intact mucous membrane.

Still, though the results of such investigations may affect a modification of the morbid pictures, inasmuch as an anatomical substratum has been demonstrated in conditions hitherto interpreted as purely functional, the importance of the functional disturbance *per se* has undergone no change; for, even in cases of the coarse, better-known lesions, we are able to understand the morbid condition caused by them, and, moreover, to institute a rational treatment, if we bear in mind the deterioration which the functions of the stomach suffer in consequence. Hence the study of the functional disturbances forms the most important portion of the chapter on the pathology of the stomach.

It is surely a distinct gain that the modern development of the theory of stomach diseases led to the study of the normal and morbid functions of that organ, and it may also be admitted that many a valuable result has already been gained in this field. Of course, there has been no lack of errors; these are found especially in the views regarding anomalies of secretion which for some time dominated the literature of this special subject.

Following von den Velden's interesting discovery, investigators began to study the presence of hydrochloric acid in the gastric contents, and committed the error, which is still often met with, of referring the results of these examinations exclusively to the secretion. Where large amounts of hydrochloric acid were found, it was concluded that much gastric juice was secreted; and, on the other hand, where small quantities were observed, a diminution of secretion was assumed. However, the data for calculating the quantity of the secretion are by no means so simple as is generally believed. Of the numerous methods devised in the course of years for estimating the quantity of the secreted hydrochloric acid not one, as a matter of fact, answers the requirements; all the quantitative methods calculate merely the percentage of hydrochloric acid in the gastric contents, and even this only for the moment of their removal. The percentage of hydrochloric acid in the gastric contents, however, depends by no means solely upon the amount of the secretion, but is the result of very different factors. At the time when a sample is taken from the stomach for a test, a portion of the contents, and with it a part of the secreted hydrochloric acid, have already passed from the organ. Besides, the concentration of the gastric contents varies, and thus necessarily the percentage of hydrochloric acid does likewise. The difference in concentration, however, depends upon the amount of the swallowed saliva, the quantity of transudation from the wall of the stomach, etc. The concentration, furthermore, depends also upon the mode of evacuation of the stomach. For instance, if substances which retain hydrochloric acid remain too long in a stomach affected with motor weakness, the percentage of hydrochloric acid will be increased without any more hydrochloric acid having been secreted. However important it may be for other reasons to know the percentage of hydrochloric acid or the degree of acidity of the gastric contents, after what has been stated, we are not justified in forming an immediate conclusion as to the condition of the secretion from the results of the quantitative determination of hydrochloric acid, since changes of the mean normal acidity may, among other causes, be due to disturbances of motility.

Similar conditions exist with reference to the demonstration of the products of digestion. Whenever products of digestion have been formed they soon pass from the stomach. Finding them in the gastric contents, therefore, as Linossier has clearly shown, may be valueless for estimating the action of the secretions, and merely enables us to form a conclusion as to the force with which the stomach endeavors to rid itself of the elaborated food.

In another direction, too, a mistake was made. The percentage of hydrochloric acid in the gastric contents was identified with the chemical activity of the stomach. The condition of the hydrochloric acid, however, throws light

* Read before the German Medical Society of the City of New York, January 6, 1896.

only upon one side of the complicated chemical processes in the organ; for the activity of the gastric juice is determined not only by the hydrochloric acid, but also by the ferments, pepsinogen and rennet zymogen; moreover, the organ secretes mucus in addition to gastric juice; besides, the saliva plays a prominent part in the chemical transformations occurring in the stomach, and finally, very marked chemical changes in the gastric contents may occur if fermentation sets in. But of late, since attention has been devoted to the elucidation of the long-neglected fermentative processes, observers have been forced to the conviction that their prevention or occurrence depends not so much upon the secretion and effect of the gastric juice, as it does upon the state of the motility of the stomach.* From several points of view the investigations into the chemical activity emphasize the fact that the state of the motor functions is of the greatest importance for the chemical transformations effected in the stomach.

The view is frequently expressed that the result of the numerous investigations into the chemistry of stomach digestion did not come up to the expectations originally entertained. This is correct only for the exaggerated estimation in which the secretory anomalies were erroneously held. But if we emancipate ourselves from this erroneous idea and interpret the conception of the chemistry of the stomach in the above named more extended sense, we can not deny that the investigations into the chemical activity have yielded important information as to the function of the stomach. A most satisfactory part of this inquiry has been the light it has helped to shed upon the motor activity. Especially in the course of the investigations into the gastric fermentations, it was inevitable that interest in motor disturbances should be aroused. Although their proper appreciation has not reached the necessary limits, their importance is more frequently recognized than was formerly the case. Thus has been effected a return to a view which forms the starting-point of the entire modern development of the pathology of the stomach; for when Kussmaul introduced the use of the stomach pump into medicine he was led to it by considerations regarding the mechanical interference with the evacuation of that organ. In his estimation the state of the motor function was from the start the main point, and although the thorough investigations into the chemical methods of examination sprang from his own clinic, he remained true to his view even at that time when the results of the chemical tests led to an almost universal overestimation of the secretory disturbances.

Unquestionably disturbances in the elaboration of the gastric juice do occur, and their importance will not be underestimated in this paper. But, as Fleiner expresses it, if we were to judge of the value of a function from the degree of disturbance produced by its arrest or impairment, the motor function must be given the first place in the stomach; for impairment of this function leads almost invariably to imperfect digestion and malnutrition, while on the contrary even marked reduction of gastric secretion is borne remarkably well. This becomes clear if we take into consideration the task the stomach is intended to perform in the economy.

The views as to the object of gastric activity have changed at various times. For a while the digestive power of the gastric juice upon albumin was considered the most essential; later the antiseptic effect of the hydrochloric acid came into the foreground. But neither of these effects of the gastric secretion by itself constitutes the object of the activity of the stomach. I believe we come nearer to the truth with the following view of the importance attached to the activity of the stomach in the economy.

By far the greatest and most important portion of digestion is effected in the small intestine; upon this point all authorities are agreed. In order to enable the small intestine to perform its heavy task it seems to be necessary that the chyme reach it in small quantities. But we are accustomed to take our food at once in larger amounts. To the stomach, therefore, is given the task in the first place to pass the food, which reaches it in larger amounts, into the intestine by degrees in smaller quantities, and hence it serves, as it were, as a reservoir. According to the bulk of the meal the stay in this reservoir may last as long as six hours.

During this long sojourn in the stomach, which is necessary in the interest of digestion in the small intestine, the food undergoes a series of changes in two directions, which prepares it for intestinal digestion. In the first place the comminution and chemical decomposition which have begun in the mouth are continued, in the first phase of gastric digestion, by the action of the saliva swallowed along with the food, which transforms the starch into maltose, until, after sufficient formation of gastric secretion, the latter begins the peptonization of the albuminous substances. The second form of preparatory activity of the stomach consists in the prevention of fermentations. With the food we introduce so many ferment-producing and fermentible bodies that fermentation would readily ensue during the long retention in the stomach, especially at the temperature there prevailing, were it not that provision has been made to prevent it.

We may say, therefore, that to the stomach is given the twofold task of delivering the chyme, first at the proper time, and second in a suitable condition, to the intestine for final digestion.

Now, what part do the several functions of the stomach take in the performance of this task? That the transmission of the food into the intestine is a motor act is at once evident. As to the preparatory activity of the organ, it is correct that the gastric secretion participates largely both in the comminution of the food and in the prevention of fermentations, but it does not do so unaided. In the comminution of the food the saliva acts conjointly, and for the prevention of fermentations the movement of the contents is decidedly more important than the antiseptic power of hydrochloric acid. Thus it may be understood that the preparatory activity pertaining to the gastric secretion may be entirely dispensed with without necessarily

* See I. Kaufmann. Beitrag zur Bacteriologie der Magengährungen. *Berl. klin. Wochenschrift*, 1895, No. 6.

doing harm to the economy. In the not infrequent cases in which gastric juice is no longer secreted, as long as the motility remains intact, the food not only passes at the right time into the intestine without having undergone fermentative change, but the portion of gastric digestion which is really lacking—the peptonization of the albuminoids—is completely replaced by intestinal digestion. Matters are altogether different, however, when the motility is affected. When the stomach is no longer able to pass the food which has reached it into the intestine for further elaboration, the general nutrition of the body is rapidly reduced. In less marked motor disturbances the food, while passed into the intestine, reaches it in an unsuitable state; for, as stagnation occurs, fermentations develop, and these ensue even when active gastric juice is secreted in sufficient quantity. It is only the kind of fermentation which differs according to the presence or absence of gastric secretion.

In view of the harm that may be done to the general system we are justified in giving motor disturbances the first rank.

The discussion of motor disturbances should begin with a description of the motor activity under physiological conditions. Unfortunately, our knowledge in this respect is still slight, and this is particularly the case with the action of the muscles which regulate the opening and closure at the cardia and the pylorus. However, more recent investigations permit, at least in one direction, an interesting insight into the course of the movements of the wall of the stomach.

Hoffmeister and Schütz, Rossbach, and others had already in earlier times determined by experiments upon dogs that we must keep strictly separate two segments of the stomach whose movements differ from each other markedly in form—namely, on the one hand, the antrum of the pylorus, and, on the other hand, the remaining larger portion, the fundus or body of the organ. The movement of the body of the stomach, starting from the cardia, extends peristaltically toward the antrum, at a short distance from which it usually ceases with a pronounced constriction. As soon as this pre-antral furrow is fully developed a contraction of a circular muscular bundle situated between the two segments follows. This bundle, which is called the sphincter of the antrum, by its contraction divides the interior of the stomach into two cavities. Immediately thereafter ensues a total contraction of the entire antrum of the pylorus, by which the contents within this smaller cavity are ejected through the pylorus, which opens at the same time. This description, which has been confirmed by occasional observations in men by Schmidt and von Pfungen, is well borne out in a paper recently published by Moritz. The latter author demonstrated, both in the lower animals and in man, by systematic manometric measurements, that there is in the interior of the empty body of the stomach a positive pressure of about six to eight centimetres of water, dependent upon a certain tone of the wall of the organ plus the influence of gravity from the neighboring viscera. This interior pressure undergoes regular variations due to the activity of the heart and the diaphragm, and is also increased by the influence of the abdominal walls. While the pressure curve taken in the body of the stomach remains absolutely unchanged through the entire period of gastric digestion, as it does in the empty organ, the curve taken in the antrum during digestion shows very considerable rhythmical rises of pressure. Therefore the difference of pressure necessary to propel the contents of the stomach into the intestine is produced only in the antrum. Hence, for the two tasks set to the stomach, we have two separate organs: first, the antrum of the pylorus, which alone effects the discharge of the contents, and, second, the body of the stomach, which serves as a reservoir and in which the preparation of the food goes forward. In full harmony with such separation is the anatomical difference of the two portions as regards the structure of their mucous membrane, which in the body of the stomach contains almost exclusively peptic glands, while that in the antrum is richer in mucous glands.

Whether the manometric measurements will be found suitable in daily practice for testing the motor function is still *sub judice*, but it is doubtful; for, since in the body of the stomach the pressure shows no change during digestion, the method could only be used for testing the activity of the antrum. According to the description given by Moritz, however, the introduction of the apparatus into the antrum is connected with great difficulties and really depends upon accident.

Recently, as you may know, Einhorn has endeavored to determine by means of his gastrograph the muscular labor performed within the stomach. Although we hope that he may succeed in clearing up the motor activity of the stomach in this way, yet the results of his investigations have not proceeded far enough to permit us to draw from them deductions of practical value.

In the present state of the subject, therefore, we are not yet in the position of testing directly the course of the motor activities in their several phases, and hence for the time we must remain content to establish the effect produced by motor disturbances in order to measure the latter from such effect.

Whenever the expulsion of the gastric contents is prevented or retarded, ingesta will be found in the stomach longer than normal. For calculating the time within which the stomach expels its contents various methods have been devised, such as the oil method of Klemperer, the Ewald-Siever salol test, Fleischer's iodoform test, and others. But aside from other sources of error, they all have the drawback that they presuppose other conditions than those usually present in the stomach. It is best, however, to follow the processes which take place daily in the organ. A healthy stomach always expels its contents completely overnight; if ingesta are still found in the fasting stomach a grave motor disturbance is present. This applies not only to the finding of remnants of food, but also to the presence of larger amounts of fluid in the fasting stomach. As this fluid generally contains hydrochloric acid and digestive ferments, their presence has been erroneously ascribed to hypersecretion. The causal factor, however, is to be sought in motor disturbance, in consequence of which the evacuation of the organ is impaired.

For less marked disturbances Leube's test meal still remains the best method; that meal should have passed out of the stomach after six to seven hours, and if ingesta are still found after this time it would indicate retarded evacuation. Up to a certain point the test breakfast taken for chemical examination may be utilized for estimating the motor power from the quantity of ingesta remaining after one hour from the finding of digestive products, their relation to each other, and the percentage of hydrochloric acid contained. It is true the accumulation of digestive products may also be caused by impairment of absorption. However, absorption in the stomach, as shown by the investigations of Hirsch, von Mering, Moritz, and others, is probably not very great at best, and so long as no more is known about it we may be pardoned for making the mistake of ascribing the delayed evacuation to motor disturbance.

Retarded evacuation also impairs the activity of the body of the stomach, in which part stagnation occurs. If we wish to draw conclusions here, too, from the effect of the disturbance, we must exclude as unsuitable one part of the preparatory activity performed in this organ—namely, the comminution of the food. For this comminution is not brought about by mechanical means, the muscular wall of the stomach not being strong enough for this; moreover, under energetic contractions of the stomach wall secretion would suffer, and finally the above-named experiments of Moritz have shown that no increase of pressure occurs in the body of the organ during digestion. The comminution of the food is effected by chemical means through the action of the saliva and the gastric secretion, and the movements of the stomach contribute thereto only indirectly by causing an intimate mixture of the digestive juices with the ingesta. A better factor for the estimation is afforded by the manner in which the second part of the preparatory activity—the prevention of fermentation—is performed. Since it has been demonstrated that fermentations occur only when food stagnates in the stomach, no matter whether secretion is elaborated or not, we may for practical purposes also assume inversely that stagnation is present when fermentation has been determined, either by the microscopic finding of increased ferment producers in the gastric contents or by the chemical demonstration of the various products of fermentation—lactic acid, fatty acids, the gaseous products of yeast fermentation, etc.

As a diagnostic auxiliary may be mentioned the proof of diminished elasticity of the stomach wall, in consequence of which the organ is dilated more than normally by a meal, by fluids, or by gas. This is recognized by comparing the outline, as determined by percussion, with reference to size and location of the stomach in the empty and full condition, especially under different positions of the body. To some extent, too, the elasticity of the stomach wall may be estimated by irrigation of that organ. In a stomach with flabby walls the water rushes down from the funnel, but when the latter is depressed it escapes but slowly from the organ; while, when the stomach possesses good contractility, the water flows in very slowly, but pours forth forcibly from the lowered funnel. The distention of the stomach with carbonic acid may also be utilized in this direction. The muscular structure of the stomach in health reacts upon carbonic-acid irritation by vigorous peristalsis, and expels the gas either by eructation or through the pylorus, after a manifestation of a painful sensation due to distention of the wall of the organ. A relaxed stomach may be greatly distended without any sensation of tension and retains the gas for a longer time. But as regards the size and location of the stomach, whether determined by distention with carbonic acid or any other means, these factors can not serve by themselves in estimating the motor power. Although it is correct that motor disturbances in their course often lead to dilatation of the stomach, still, on the other hand, not every large stomach is dilated. Even under normal conditions the size of the organ is subject to very considerable variations. A stomach may be very large and yet be thoroughly sufficient motorially. Thus, Liebermeister relates the case of a coachman who was famous for being able to empty large bumpers full of beer at a draught. At the autopsy of this man, dead from an accident, who during life had never suffered with digestive disturbances, the stomach, although having a capacity of six litres of fluid, was anatomically normal. The same remark applies to the location of the organ. While it is true, as Kussmaul has shown, that a vertical or low stomach is disposed to motor disturbances, the altered position in itself does not indicate an existing insufficiency. Even a deeply seated stomach may functionate normally. Not long since I saw a tall, slender man whose stomach had completely expelled Leube's test meal within four hours, though the organ was so low down that the greater curvature nearly reached the symphysis. How little the determination of the location and size of the stomach *per se* is liable to furnish a correct idea of the state of the motility is proved furthermore by the fact that very material stagnation may develop in a small and at the same time high stomach; this is observed, for instance, in an infiltrating carcinoma of the wall of the stomach. For this reason the diagnosis of motor disturbance should never be made except in the above-named manner on the strength of direct functional tests. The favorite method of demonstrating motor disturbance or even gastrectasia from the production of a splashing noise is quite faulty. A splashing noise may be evoked in every stomach containing some fluid and air, provided the abdominal walls are sufficiently relaxed. It has a diagnostic value only when it can be produced in the fasting stomach, indicating that the organ is not empty. Besides, the splashing noise often enables us to mark the location and size of the stomach in a convenient manner. More than this can not be deduced from this sign, and it is about time that the practice of citing the presence of a splashing noise as a criterion for atony and gastrectasia be discontinued.

When the motor disturbance is very marked, and the transmission of food into the intestine is much restricted, there appears that characteristic clinical morbid picture which can be at once recognized even without direct examination of the stomach—namely, extreme emaciation, dryness of the skin, obstinate constipation, pronounced

oliguria, and in strong contrast to this the vomiting, usually toward evening, of large masses of fluid in active fermentation. For the minor motor disturbances it is hardly possible to give a definite clinical picture; perhaps the most characteristic feature is that the dyspeptic symptoms follow directly upon the digestive act, the patients feeling better whenever the stomach is empty. Otherwise the symptoms caused by motor disturbances mingle with the clinical pictures of the morbid states which produce them. In all such cases the indication is to test the function directly by examining the contents of the stomach in order to diagnosticate motor disturbance.

As regards the occurrence of motor disturbances, they may be met with in all sorts of gastric diseases. They are brought about either by insufficiency of the muscular action or by obstacles opposed to the expulsion of the contents of the organ. The obstacles appear usually at the pylorus, and depend upon ulcer, carcinoma, or benign hypertrophy of the muscles at this point; sometimes they are caused by compressing tumors in that vicinity or by ligamentous constrictions. Not rarely a temporary stenosis may be due to spasm of the pylorus (Kussmaul).

Weak muscular activity is frequently the result of constitutional diseases, anæmic and neurasthenic states, and develops with special facility during convalescence from acute diseases. In this variety of motor insufficiency we do not always meet with constant conditions; on the contrary, we find in the same person great alternations, the stomach being at one time in motor vigor, at other times motorially weak. The weakness of the muscles may also be only relative—that is, insufficient only for excessive demands upon them. This is the origin of the difficulties in evacuating the stomach when it is overloaded, and in the same way may be explained the occurrence of motor weakness when larger quantities of fermenting substances are introduced and the stomach is inordinately distended by the mass of gas developed (Naunyn). Weakened muscular action, however, may also be due to organic changes in the wall of the stomach, and this form is found not only in ulcer and carcinoma of the wall, but also—which I must insist upon, contrary to the statements of Boas—in gastric catarrh. Of course, it is true that in gastritis the evacuation of the stomach is often not retarded; in certain cases, especially in atrophic gastritis, it is sometimes even accelerated.

Thus far only reduced motility has been under discussion here; for the sake of completeness it may be stated that there is also a hastened evacuation of the stomach, either, as mentioned above, in gastritis by reason of inflammatory irritation of the muscles, or else an increased motility of a purely nervous order; furthermore, there is another gastric neurosis, described by Kussmaul as peristaltic unrest, which manifests itself by signs of greatly accelerated peristalsis.

If I am to add briefly some general points with reference to treatment, I should like to emphasize the fact that special ætiological factors must be considered first, and the causes removed. Motor weakness in anæmia, neurasthenia, etc., will yield only to a suitable general treatment. In this respect, proper diet is of the greatest importance. The ingesta must be sufficient to keep the body weight constant and, if necessary, even to cause an increase. But the food must be so selected and prepared that it will be apt to leave the stomach as early as possible. In this, the cooking art can be of much assistance by sparing the stomach a portion of the preparatory activity. But I wish to call attention to a very prevalent error. We generally find in text-books the rule laid down that only solid food should be given in motor disturbances, and to restrict the ingestion of fluid *per os* as much as possible. This rule, though useful in certain cases, is not a safe one in all cases. At Kussmaul's clinic it was precisely in the severest motor disturbances that we obtained far better results by feeding exclusively with suitable liquid or semifluid diet than with solid articles. Liebermeister had the same experience with his patients. These clinical experiences harmonize also with the results of experimental investigations, according to which, as has been demonstrated especially by von Mering, Moritz, and more recently by Schüle, fluids pass from the stomach very soon, while solid articles remain long in the organ, the time increasing with the consistence of the ingesta. Solid food must first be softened or liquefied before it can pass through the pylorus. Besides, owing partly to the chemical nature of the food, partly to its longer retention in the stomach, there is an active secretion by the wall of the organ, whereby the intended advantage of the dry diet is soon rendered illusory. But in recommending a dry diet the idea was that a filling of the stomach with considerable amounts of fluid must increase the muscular weakness. This is true whenever larger quantities of fluid are taken in at once, but not when fluid is introduced in smaller amounts. In preparing such a diet consisting of liquid and semifluid articles, care must be taken, as shown by Fleiner in interpreting Kussmaul's experiences, not only that the fluid be given in smaller amounts and at definite intervals adapted to the individual conditions, but the diet must also be bland and not liable to irritate the gastric mucosa; that is to say, it should contain no concentrated solutions of salts or peptone, no sugar, and especially no alcohol, since all these substances stimulate the mucous membrane to increased secretion and transudation, whereby the amount of fluid is soon augmented. Even in cases of slighter degrees of motor insufficiency in which the giving of full meals of mixed diet is permissible, the chemical character of the food with reference to the choice of the articles is of the greatest importance. The examination of the gastric contents is far more useful for the treatment than for the diagnosis, since it gives information as to which articles leave the stomach soon and which encumber it for a long time; besides, it furnishes the best indication for the selection of the diet in gastric fermentations.

In the case of fermentation, aside from excluding ferment-producing and fermentible substances from the diet list, the suppression of the fermentation within the stomach comes into consideration. This is best effected by thorough cleansing of the organ by means of irrigations, possibly with medicinal solutions.

Irrigations of the stomach are furthermore indicated when the fasting stomach is not empty, whether remnants of food, or liquid containing hydrochloric acid, be found. As the cleansed and evacuated stomach contracts markedly, it may regain its former elasticity. Only in cases in which such and similar indications are present should irrigation be practised—a fact to be specially noted in view of the prevailing abuse of this practice.

The treatment may be supported in many ways by hydrotherapy and electricity. Of great importance, too, is the activity of the patient during the day. In serious motor disturbances strict rest in bed is advisable; in the slighter grades the dorsal decubitus should be maintained at least for some time after the chief meals, since the stomach is thus more easily evacuated.

When great obstacles prevent the evacuation of the stomach, and success is not to be expected by the methods of treatment named, surgical interference for the removal of the obstruction should be attempted. The brilliant results obtained by surgery even when the diseased part is left intact and sufficient evacuation of the stomach is provided for by a gastro-intestinal fistula, plead most clearly for the importance to be attached to the motor disturbances.

Bibliography.

Cohnheim. *Archiv f. Verdauungskrankheiten*, 1895, Bd. i, p. 274.

Einhorn. *Zeitschrift f. klin. Med.*, 1895, Bd. xxvii.

Fleiner. Volkmann's *Samml. klin. Vorträge*, neue Folge, 1894, No. 103.

Hayem. *Gaz. hebd.*, 1892 and 1894.

Hayem. *Allgem. Wien. med. Zeit.*, 1894.

Hirsch. *Ctrlbl. f. klin. Med.*, 1893.

Hoffmeister and Schütz. *Arch. f. experim. Path.*, Bd. xx.

Kussmaul. *Deutsch. Arch. f. klin. Med.*, 1869, Bd. vi.

Kussmaul. Volkmann's *Samml. klin. Vorträge*, 1880, No. 181.

Liebermeister. *Krankheiten der Unterleibsorgane*, Leipsic, 1894, p. 82.

Linossier. *Lyon méd.*, 1894, Bd. xxvi.

v. Mering. *Verhandlungen des Congr. f. innere Med.*, 1893, p. 471.

Moritz. *Zeitschrift. f. Biologie*, 1895, Bd. xxxii.

Naunyn. *Deutsch. Arch. f. klin. Med.*, 1882, Bd. xxxi.

v. Pfungen. *Ctrbl. f. Physiol.*, 1887, pp. 220, 275.

Rossbach. *Deutsch. Arch. f. klin. Med.*, Bd. lxvi.

Schmidt. *Berl. klin. Woch.*, 1886, p. 542.

Schüle. *Zeitschrift f. klin. Med.*, 1896, Bd. xxix.

von den Velden. *Deutsch. Arch. f. klin. Med.*, 1879, Bd. xxii.

52 East Fifty-eighth Street.

The Intercolonial Medical Journal of Australasia is the title of a new journal formed by the amalgamation of the *Australian Medical Journal* and the *Intercolonial Quarterly Journal of Medicine and Surgery*. It is published monthly.

The Ohio Medical University held its annual commencement in Columbus on Tuesday, March 17th. An address was delivered by Dr. John B. Hamilton, of Chicago, the editor of the *Journal of the American Medical Association.*

THE PRESENT STATUS OF GASTROSTOMY

WITH THE REPORT OF A SUCCESSFUL CASE ACCORDING TO THE SSABANEJEW-FRANK METHOD.*

By FRANK LE MOYNE HUPP, A. M., M. D.,
ATTENDING SURGEON TO THE CITY HOSPITAL OF WHEELING, WEST VIRGINIA.

There is no theme in the expanded area of medical thought which is so justly entitled to the real pride of our profession and which has won of mankind a greater degree of gratitude and admiration than up-to-date surgery and its multitudinous achievements.

In its own sphere, where pain and suffering have been relieved, and where life has been preserved and prolonged with almost marvelous progress, it has more than kept pace with the other branches of science.

Morton discovered anæsthesia, and a priceless blessing it has been to mankind, for it has already saved thousands of lives and is "destined for all time to come to compound the sum of human happiness." But anæsthesia did not begin with the lamented Morton. We are told somewhere in the Holy Writ that "a deep sleep was caused to fall upon Adam and he slept," and it was during this sleep in the Garden of Eden we are further told of the first surgical operation: an exsection of a rib, for "bone of his bones" was taken from his side and the flesh closed up instead thereof, and in this way his helpmeet Eve was fashioned and in "soft attractive grace" brought unto him.

Whether or not the narrative be conceded as a visionary forecast of painless surgery, the fact remains that ever since that primeval day up to the present time the idea of preventing pain by artificial means has been continually presenting itself.

What would modern surgery have been without anæsthetics?

Not only have the terrors of the operating table been abrogated, but almost every pain with which the human frame can be punished has been relieved by their administration. The prevention of pain has been throughout all ages the most engrossing and widespread object of human solicitude. On this fact alone depends the very origin and existence of the science of medicine itself, and we can say, without fear of being contradicted, that anæsthesia stands as the very highest triumph it has yet achieved.

But I am digressing: this is not to be a dissertation on anæsthesia.

Who will dare compute the ultimate results of the work begun by such men as Ephraim McDowell, Marion Sims, Joseph Lister, Morton, Koch, and Pasteur?

Genius like that of Watts and Fulton, "Stephenson with his bottled sunshine," Morse, Edison, and others may justly claim the tribute of man's admiration; but to the men we have mentioned, shining lights of our art, with an equal admiration, he adds that fuller measure of his gratitude.

One need go no further than the present status of gas-

* Read before the Medical Society of the City of Wheeling and Ohio County, February 7, 1896.

rostomy for a demonstration of the rapid progress in surical methods.

It has only been within recent years that the operation f gastrostomy, when done for the relief of the starvation hich comes with œsophageal stricture, has been considred a wise and expedient method of prolonging human fe. Nevertheless, incision of the stomach for the removal f a foreign body is a very ancient surgical proceeding. Ve find interesting accounts of these cases in the writings f medical men who lived before the reign of Louis XIV.

Crollius opened the stomach in 1602 for the removal of knife. Günther, in 1613, performed the same operation.

Chelius * gives an interesting account of the case of a young peasant who, on the 29th of May, 1635, while endeavoring to produce vomiting with the handle of a knife, et it slip from his fingers and it passed into his stomach. He was much frightened, but able to go about his usual occupation. It was, however, determined to remove the knife by operation, which was done on the 9th of July following, by a surgeon and lithotomist named Shoval.

A straight incision was made in the left hypochondrion, two fingers' breadth under the false ribs; first through the skin and cellular membrane, then through the muscles and peritonæum. The stomach subsided and slipped from the fingers, but it was at length caught hold of with a curved needle and drawn out of the wound. A small incision was then made into it upon the knife, which was then easily extracted. The stomach immediately collapsed. After the external wound had been properly cleansed, it was united with five sutures, and tepid balsam poured into the interstices. Tents impregnated with the same balsam and a cataplasm of bolar earth, the white of egg, and alum were then applied. The patient made a complete recovery.

Notwithstanding the encouraging reports of gastrotomies so far removed as the early part of the seventeenth century, and the numerous cases reported since, where foreign bodies have been removed, the operation was hardly accepted by all surgeons, and the small number of cases recorded in the literature of the subject indicate the entire want of sympathy exhibited by medical men until the heroic work done by Dr. W. T. Bull,† of New York, and Dr. Maurice H. Richardson,‡ of Boston. Gastrostomy for the relief of symptoms caused by œsophageal stenosis was first suggested by Egeberg, of Norway, as early as 1837; he published his observations in 1841.#

M. Sedillot, of Paris, christened it gastrostomy and defined clearly the indications in 1846, performing the first gastrostomy on the human subject, November 13, 1849, at the Strasbourg Clinic. Fenger, of Copenhagen, modified the operation in 1853. Sydney Jones, of London, was the first surgeon to have a successful case, in 1875.

The London *Medical Times and Gazette* for June 22, 1872, publishes a case reported by Mr. Thomas Smith. Gastrostomy was performed on March 21, 1872; the patient lived four days, and died of peritonitis.

The author of the paper stated before the Clinical Society of London, as late a day as 1872, that up to that date there were twelve recorded cases, all of which had ended fatally. His opinion was not favorable to interference in these cases. Dr. Benjamin W. Richardson,* two years later, after reporting an unsuccessful case, remarked that he was strongly averse to the employment of gastrostomy in these cases.

On October 27, 1876, M. Verneuil† communicated to the Académie de médecine a most interesting case of gastrostomy performed by him. Up to that date the operation had been performed sixteen times without success, with the single exception of Sydney Jones's case; but in all of these cases the patients were already weakened by hunger, anæmia, or cachexia. This being one of the very first successful cases on record, I may be pardoned for giving a brief synopsis of it. It is a translation from *Le Mouvement médical* of October 28, 1876, and was published in the *American Journal of the Medical Sciences*, vol. lxxiii, p. 255:

A lad, aged seventeen years, who on the 5th of February, 1877, swallowed by accident a solution of caustic potash. He immediately experienced a sensation of intense burning in the throat, followed by fever and exfoliation of the mucous membrane of the pharynx and œsophagus. Difficulty of swallowing developed after fifteen days and gradually increased. On May 24th attempts at œsophageal catheterization were repeatedly made without success. Gastrostomy was decided upon; chloroform was administered, and full antiseptic precautions were taken during the operation. Fenger's incision was made obliquely below the left costal margin two inches long. The stomach was drawn through the incision and stitched to the wound by fourteen metallic sutures. The viscus was opened and a tube introduced. Recovery was uneventful.‡

We have the record of this operation being first performed in America by Dr. F. F. Maury, of Philadelphia, June 25, 1869, and first in New York by Dr. A. Jacobi in 1874. Both were unsuccessful. The method employed in the above-cited cases was that suggested by Fenger, and is practically the same as that mentioned in Verneuil's case, except that the stomach is usually not opened until one or two days have gone by.

This method fell into disrepute because of the almost inevitable leakage.

Hahn,# in 1887, endeavored to overcome this objection by anchoring the stomach in the eighth intercostal space, thereby claiming that a sphincter action might be obtained which would prevent leakage; but necrosis of the ninth rib followed this procedure in four or five cases, and it was for this reason abandoned.

This brings us up to the three operations which have brought so much relief to these sufferers. No longer is that tyrant tormentor, Starvation, more cruel than Jugger-

* Chelius's *Surgery*, vol. ii, p. 391.

† *N. Y. Med. Jour.*, October 29, 1887.

‡ *Lancet*, October 8, 1887.

Meyer. *Am. Jour. of the Med. Sci.*, vol. cviii, October, 1894, p. 401; also *L'Union médicale*, October 26, 1876; *Gazette hebdom.*, October 27, 1876; *Le Mouvement médical*, October 28th.

* *Lancet*, October 25, 1874.

† *Am. Jour. of the Med. Sci.*, vol. lxxiii, p. 255.

‡ Meyer. *Loc. cit.*, footnote.

Hahn. *Centrlbl. für Chirurgie*, 1891, No. 32, p. 601.

naut, able to prolong the agony in a death progressing at a snail's pace.

Those of you who have seen the horrible suffering of a man literally starving to death, with more than an abundance to eat and drink before his eyes, from a slowly but surely increasing stenosis of the œsophagus, can understand why the surgeon and the anatomist have labored so unremittingly in the direction of a more perfect gastrostomy.

To-day the physician has no just cause for discouraging his patient against operative interference for the relief of the starvation which comes with stricture of the œsophagus.

The primitive methods have been done away with, and the brilliant achievements of von Hacker, Witzel, and Ssabanejew and Frank have completely revolutionized this branch of surgery.

Von Hacker,* of Vienna, published his method in 1886, which is essentially as follows: An incision is made, beginning an inch below the free border of the ribs, running parallel with the fibres of the left rectus muscle, about an inch to the left of the linea alba and extending downward three inches.

With a blunt instrument the fibres of the muscle are separated and the peritonæum is opened. The stomach is brought through the opening for about an inch and sewed to the serous membrane, muscle, and subcutaneous tissues; re-enforcing sutures of silkworm gut are placed at the two extremities of the wound, passing through the entire thickness of the abdominal wall and including the muscular and serous coverings of the viscus. Scarification of the rectus fibres renders the sphincteric action more pronounced (Girard). The wound is temporarily dressed, and in three days the stomach is incised and a tube with a stopcock inserted.

I had the privilege of witnessing this operation as performed by Dr. Willy Meyer, the leading exponent of advanced gastrostomy in this country, several years ago, and have described it as near as possible as he performed it. Dr. Meyer† has performed von Hacker's operation for carcinomatous œsophageal stricture six times with the following result:

"One died in five days after the operation in consequence of extreme weakness; two succumbed to a perforation of the growth into the trachea on the tenth and twelfth days respectively; one lived three months, one four months and a half, and one eight months and a half after the operation. In every one of the cases the functional result was good."

Dr. Thomas S. K. Morton,‡ of Philadelphia, in a very excellent paper recently published on this subject, says that the "average result of this operation is very fair, but there is great uncertainty that regurgitation will be prevented"; that its rapidity of execution makes it of distinct advantage; also, that it should be the operation of election where subsequent retrograde œsophageal catheterism or instrumentation is desired.

This operation is distinctly contraindicated in malignant strictures where the patient's condition justifies either the Witzel or Ssabanejew-Frank method.

Oscar Witzel,* in 1891, described a method which bears his name and has been styled by Morton as "the most popular of modern gastrostomy operations."

The oblique incision of Fenger is made below the left costal arch; the respective muscles are bluntly separated in the direction of their fibres, so as to procure as far as possible a sphincteric contraction; this is partially obtained because the fibres of the rectus and those of the transversalis cross one another at right angles. The peritonæum is opened obliquely and the stomach brought well forward through the incision. At this point the surpassing ingenuity of Witzel is displayed. The peritonæum is shielded by a sterilized compress packed closely about the edge of the wound. A rubber tube six inches long and about a quarter of an inch in diameter, or a little larger than an ordinary lead pencil, is now introduced a short distance into the stomach through the smallest possible opening. About two inches of this tube is now received into a vertical groove made in the anterior wall of the viscus and completely infolded or covered for the same distance by Lembert sutures. Several similar sutures are placed below the point of entrance of the tube to insure a more perfect protection to the cavity of the peritonæum.

That part of the stomach about the infolded tube is sutured to the parietal peritonæum, according to the suggestion of Mikulicz, and the muscular and integumentary wounds are closed up to the tube opening. Thus the patient can be fed immediately, which is a distinct advantage and of vital importance in most cases.

The disadvantages of this operation are few, but it may be well to mention them in passing: 1. It is tedious and difficult of performance, requiring more time than any other method. 2. The stomach must of necessity be opened before the peritoneal cavity is closed, thus subjecting that membrane to the danger of infection. 3. The patient can not be at any great distance from the surgeon, as the tube may need "readjustment or reintroduction" (Morton). 4. Œsophageal instrumentation is out of the question. Notwithstanding these objections, the method is a most excellent one, and has received high praise from Meyer, Mikulicz, Keen, Senn, and others, who have performed it successfully.

Ssabanejew-Frank Method.—The last method of gastrostomy to which your attention will be called bears the name of the two surgeons who devised and performed it independently.

J. F. Ssabanejew, a Russian of Odessa, operated according to this method in May, 1890, and published his result in the Russian language in June, 1893.

Rudolph Frank performed the very same operation November 23, 1892, without being aware of the Russian's similar procedure two years and a half before.

In order that there may be no repetition of description

* *Wien. med. Wochenschr.*, 1886, Nos. 31 and 32.

† Dr. Meyer. *Loc. cit.*

‡ *Medical News*, New York, January 25, p. 85.

* Zur Technik der Magenfistelanlegung. *Centralbl. f. Chirurg.*, 1891, No. 32, p. 601 (Meyer).

f this operation, I will give an account of my own expe-ence, which is the twenty-fifth case thus far reported :

F. N., a retired iron-mill manager, living on a farm in larshall County, West Virginia, aged fifty-nine years. No orbid family history. He had at one time in his life been ddicted to the immoderate use of alcohol. No specific his-ory.

One day in the latter part of November, 1895, he suddenly xperienced difficulty in swallowing. This difficulty, with eriodical remissions, steadily increased, until he sought reatment. When he came under my care, January 14, 1896, e was not able to swallow even the smallest quantities of iquids, and for several days had been absolutely without ourishment. He was hungry and thirsty to a pitiable de-gree. He was weak and emaciated, having lost about seventy ounds since Thanksgiving day.

No pain was experienced except during the act of deglutition, and this effort invariably provoked the most distressing retching and cough.

The ejected matter had never been blood-stained nor had there been any pus seen. Rectal alimentation was immediately instituted.

Exploration of the œsophagus, made the following day, determined the presence of a constriction about eight inches from the teeth. Its size could not be definitely decided, as the smallest bulbous bougie would not engage in whatever of an orifice remained.

The age of the patient, his history, the painless but rapid progress of the stenosis, the almost characteristic odor of the ejecta, the entire absence of other ætiological factors, such as injuries or the swallowing of corrosives, at once established the diagnosis cancer of the œsophagus.

The immediate operation of gastrostomy was proposed and it was accepted.

Owing to the extreme prostration, fears were entertained that the patient would die under the anæsthetic; but, thanks to the very skillful administration of ether and chloroform by Dr. Eugene A. Hildreth, he bore the operation exceedingly well.

Every attention was paid to the details of asepticism.

With the valued assistance of Dr. Robert J. Reed, the operation was performed according to the method of Ssabanejew and Frank:

Immediately below the left costal arch the Fenger oblique incision was made, three inches and a half in length, through the integument. A blunt dissection of the muscles was made in the direction of their fibres, and an oblique incision of the peritonæum.

The omentum presented and was carefully pushed to the median line; the left lobe of the liver was retracted upward. The stomach was soon found and, without any resistance, brought up through the incision about two inches, and recognized by its size and the direction and size of the gastro-epiploic vessels. When in this position the apex of the cone was transfixed with a stout silk ligature. The base of the stomach cone was stitched to the parietal peritonæum by ten or twelve interrupted iron-dyed silk sutures. Two buried sutures of silkworm gut were placed, one at each end of the incision, including the stomach as they passed, as in von Hacker's operation. This step at once closed the general peritoneal cavity.

An incision was then made an inch long, parallel with and an inch and a half from the first incision. This extended through the skin and subcutaneous tissues. This preco-tal bridge of flesh was dissected loose, and the silk ligature which pierced the stomach cone was passed beneath it. Tension upon the ligature brought the stomach well through the upper short incision. The long abdominal wound was closed with a continuous silk suture.

The apex of the projecting stomach was incised with a tenotome and the peritoneal circumference united to the skin by interrupted silk sutures in such a way as to cause a marked puckering.

The large wound was painted with iodoform collodion and the patient immediately fed.

Subsequent Progress of the Case.—The patient made a good recovery from the anæsthetic and operation, and on the following day expressed himself as feeling better than he had felt for two months, neither hungry nor thirsty.

His progress has been free from vicissitudes.

The wounds healed primarily; the stitches were removed on the fifth day. He has steadily gained in flesh and strength and much of the cachexia has disappeared.

On account of a predisposition exhibited by these patients to hypostatic pneumonia, I insisted on my patient sitting up on the second day after the operation, and each day since the operation he has spent some of the day in a comfortable rocking chair, receiving his nourishment every three hours and a half to four hours, consisting of milk and cream, eggs, beef extract, malted milk, Johann Hoff's malt, with iron, whisky, various homemade broths, mashed potatoes, farina, etc.

There has been absolutely no leakage; even during paroxysms of coughing and sneezing no fluid escapes.

His mouth is disinfected many times every day and occasionally he swallows small quantities of carbolized water, but there is almost immediate regurgitation.

If this paper has left no further impression on the members of this society than the necessity of an early diagnosis in œsophageal stricture and the urgency of operative interference before the starvation stage of the disease is established, I shall feel amply repaid for its preparation.

"As soon as fluids and semisolids find some resistance in passing down, or as soon as the patient is visibly losing ground," says Mikulicz, "gastrostomy is indicated."

Dr. Meyer quotes von Noorden as follows: "It is absolutely wrong to let gastrostomy be the very last resort. The physician should be cognizant of the fact that a certain degree of strength and resistance is needed to stand even a relatively small operation; that a certain degree of active work of the tissues, of the organs, and of the whole organism is required to heal even a small wound, and that, lastly, the faculty of digestion and assimilation in the gastro intestinal tract ceases in a certain stage of inanition and can not be awakened, even when a gastric fistula has been established."

This operation has been performed twenty-five times, as follows: Ssabanejew, four cases; Frank, four; Meyer, three; Winslow, two; Stern, one; Morton, of Philadelphia, one; Lindner,* nine; and myself, one.

NOTE.—In the discussion which followed the reading of this paper Dr. James Schwinn reported a case of œsophageal stenosis operated on according to the method of Frank, but the stomach was not opened until thirty-six hours after operation; death resulted from inanition on the third day.

February 15th.—One month after the operation the patient men-

* *Berlin. klin. Woch.*, 1895, No. 8; also *Am. Jour. of the Med. Sci.*, February, 1896, p. 232.

tioned in this paper was suddenly seized with a violent paroxysm of coughing and died, apparently of suffocation. The probable cause of death was rupture into the trachea. No autopsy.

In the *Annals of Surgery* for March, 1896, Dr. Edward Martin, of Philadelphia, reports a successful case of gastrostomy according to the Frank method.

No. 61 Fourteenth Street.

FURTHER REPORT ON THE TREATMENT OF ACUTE LOBAR PNEUMONIA

BY THE CONTINUOUS APPLICATION OF A VERY HIGH DEGREE OF HEAT OVER THE WHOLE CHEST.

By CHARLES WILSON INGRAHAM, M. D.,
BINGHAMTON, N. Y.

During recent years much has been written upon the subject of external applications in the treatment of acute lobar pneumonia, some writers—Dr. Thomas J. Mays, of Philadelphia, in particular—asserting that the "ice pack" to the chest is the most successful mode of treating this disease. However successful the "ice pack" may have been in the experience of Dr. Mays, it would seem that it could never become a popular mode of treatment with general practitioners, for this if for no other reason: Should a physician in general practice apply ice to the chest in the treatment of a case of pneumonia and the case terminate fatally, he would be severely censured by the public at large, and perhaps by neighboring physicians who did not favor the "ice treatment."

Popular feeling is extremely antagonistic, and perhaps justly so, to the use of the "ice pack" in the treatment of pneumonia, and therefore the physician who uses it and assumes the whole responsibility of the outcome of the case must be possessed of considerable courage and confidence. For generations the public at large has been taught that heated applications only are admissible in the treatment of acute lobar pneumonia. Though it must be admitted that the ordinary modes of applying heat are very defective, physicians can not well defy time-honored ideas of the laity. But, aside from popular sentiment, I, for one, fail to see how, on general principles, physicians are justified in using the "ice pack" in the treatment of acute lobar pneumonia.

From a scientific and clinical standpoint, it is beyond question that a very high degree of heat continuously applied to the whole chest will give every therapeutical effect of the "ice pack." At the same time, the application of the high degree of heat is wholly free from the several possible dangers liable to follow or accompany the use of the "ice pack." The high degree of heat may be used promiscuously in all cases of acute pneumonia, while it is only in selective cases that the "ice pack" is admissible.

During the past year I have observed in detail the effects of a high degree of heat applied to the entire chest in the treatment of acute lobar pneumonia. In an article published in the *New York Medical Journal*, May 18, 1895, I called particular attention to a means of applying heat by the use of what I termed the "pneumonia jacket," which consists of an arrangement for the circulation of hot water through coils of rubber tubing, so arranged as to cover the whole chest. The construction of the "pneumonia jacket" was explained in detail in that article, and it will be quite unnecessary to take up the subject extensively in this paper. The "pneumonia jacket" consists primarily of a Canton-flannel jacket of a size suitable for adults. This has an exterior lining which buttons to the inner jacket, and to this are attached coils of rubber tubing in a manner designed to cover the whole chest. To prevent kinking at short bends, as well as to prevent stoppage from pressure, a coil of brass wire is first drawn inside the tubing. The exterior lining, with tubing attached, is made removable from the inner jacket, in order that it may be easily taken apart, cleansed, and disinfected. The tubing should cover both sides at least halfway back to the spine; so, therefore, when the jacket is applied to the pneumonia patient it not only covers the diseased lobes, but the uninvolved lobes as well. It also covers over the entire cardiac region, the stomach, and the liver.

By means of several feet of rubber tubing the jacket is attached to a small reservoir of hot water, the heat of which is sustained and regulated by an alcohol lamp, gas burner, or kerosene lamp, although the latter may be objectionable to many patients. The heat in the reservoir is accurately regulated by a thermometer. As the water circulates through the tubing it is finally carried to a reservoir at the foot of the bed. The circulation of the water is governed by valves on the inlet and discharge tubes. Before applying the jacket the chest should be enveloped in absorbent cotton, while directly over the cotton is placed the pneumonia jacket. By first putting on the cotton a higher degree of heat can be borne by the patient, as the cotton moderates the heat by securing slower radiation. Then, too, the jacket causes some sweating, which will be readily absorbed by the cotton; the cotton also gives mechanical protection. The water circulates through the jacket by force of gravity. The apparatus is extremely simple in management; it is, in fact, nothing more than an accurate mode of applying heat to the entire chest. It is applicable in children as well as in adults; nor is the usefulness of this method of applying heat limited to chest diseases. I have made use of the method in membranous croup, or, more properly speaking, laryngeal diphtheria. The extremely high degree of heat obtainable by this method, continuously applied over the throat and upper portion of the chest, seems to prevent extension of the membrane and to control its formation at the point of involvement. In one noticeable case in which the appliance was utilized, and in which almost the entire dependence was placed upon the high degree of heat, the disease ran a very mild course of about five days' duration; at no time was there any danger of asphyxia.

In the treatment of peritonitis and various abdominal inflammations continuous high heat seems the remedy *par excellence*. Not only can a high degree of heat be applied by utilizing this principle, without disturbing the sufferer in the least, but on account of its lightness it is easily borne when poultices can not be endured. Every one is familiar with the drudgery and anxiety attendant upon the

use of poultices in the treatment of various acute inflammations. While this mode of applying the heat is not of modern origin, the apparatus reducing it to a practical basis is of quite recent device. Physicians will readily appreciate that the principle will find a wide range of application in the treatment of inflammatory conditions where the application of heat or cold is indicated. Though the appliance was devised for the application of heat, it must be remembered that it is equally serviceable as a means of applying cold, as by putting ice water in the reservoir one can get all the effects of the ice pack free of its many undesirable features.

In recent literature it is mentioned that a high degree of heat applied to compound fractures is very serviceable, having the effect of restoring and sustaining vitality to parts which have been so injured as to endanger sloughing, with consequent permanent injury. It is an easy matter for physicians to construct apparatus for applying heat by this method for service upon any part of the body. Particularly has it been found serviceable in brain diseases, possessing many features superior to the common ice cap.

To return to the consideration of the pneumonia jacket proper. It has the following advantages in the treatment of acute lobar pneumonia over the ordinary means of applying heat: By its use a high degree of heat is distributed, as previously described, over the whole chest, from the clavicles to the diaphragm, thus covering the consolidated lobes, as well as those uninvolved. This latter is very important, for, as is well known, the external application of a high degree of heat over the cardiac region has the effect of a powerful heart stimulant; the further effect of the application of a high degree of heat over the chest is to dilate the blood-vessels of the uninvolved portions of the lungs, allowing them to receive with ease the additional blood which they are forced to accommodate in consequence of the consolidation of one or more lobes. Applied in the incipiency of pneumonia, when the pulse is rapid and forceful, when the respirations are shallow, frequent, and painful, and the pleuritic pains typical of pneumonia are extremely acute, the effect of a high degree of heat as obtained from the use of the pneumonia jacket is nothing short of remarkable. Not only does it quickly relieve the pleuritic, knifelike pain, but by dilating the blood-vessels, of the uninvolved portion of the lungs the "homeless blood" is at once accommodated in the enlarged vessels, and the heart, which has been laboring under the increased pressure brought about by forcing this "homeless blood" through the restricted pulmonary capacity, is at the same time relieved of embarrassment. In a very short time the respirations assume a normal character; the pain is gone; there is an immediate fall of temperature, perhaps several degrees in two hours. The pulse becomes reduced in frequency, loses its bounding character, and becomes slow, regular, and quite natural. A more pronounced effect than follows the application of this high degree of heat could not have followed the old-time method of bleeding the patient, and, moreover, is not attended with any of the dangers of bleeding. In reality the patient is bled into his own *pulmonary* blood vessels. The dilatation of the pulmonary blood-vessels and the accommodation of the "homeless blood" in this portion of the body is important, for by this accommodation here we at the same time insure its continuous oxidation. Some time ago it was suggested that as the blood-vessels of the abdomen are capable of accommodating a large percentage of the blood of the body, why not, in the treatment of acute pneumonia, when it is imperative to relieve the congested pulmonary centres, apply a high degree of heat to the abdomen and, by dilating the blood-vessels there, draw the blood from the congested areas of the lungs? But this theory (I am not aware that it ever became more than a theory) is open to criticism—namely, if it were possible to accommodate the blood in the abdominal vessels by dilating them, it would, no doubt, afford temporary relief, but by drawing the "homeless blood" to that portion of the body its proper oxidation could not be secured. In this respect the pneumonia jacket goes far beyond all other methods for the relief of pulmonary congestion and cardiac embarrassment. It not only meets the physiological demands of the occasion, but meets them on a strictly scientific basis. The pulmonary blood-vessels, through which oxidation and elimination are performed, are dilated and strengthened, which permits them to perform their various functions nearly if not quite as completely as in health. It would seem that, no matter how thoroughly we may relieve pulmonary congestion in the early stages of pneumonia, if we do not at the same time secure continuous oxidation of the blood our mode is defective. Veratrum viride will relieve the arterial excitement accompanying the onset of pneumonia by relaxing the smaller blood-vessels of the body, thus bleeding the patient "into his own veins," but veratrum can not be continuously administered to maintain this effect, and sooner or later the blood pressure in the lungs returns, to the embarrassment of the right heart.

As to the use of poultices, with all due respect to this time-honored mode of treating pneumonia, the writer fails to appreciate how any benefit can follow the application of poultices over the consolidated pneumonic lobes. Poultices can exert but little, if any, effect upon the consolidated lobes, and even in the hands of skillful operators may be harmful because of the necessity of frequently exposing and disturbing the patient. The heat very quickly radiates from poultices, which soon become cool and even cold about the borders. The application of heat to the chest in acute pneumonia, as here described, accomplishes several distinct objects in a very decisive manner.

1. It hastens the various stages of the pneumonic process.

2. The high degree of heat not only hastens the disease processes, but *sustains the vitality* of the consolidated lobes.

3. It effectually prevents further extension of the pneumonic process.

4. It sustains lobular vitality, and consequently the lobe will not be so prone to chronic disease or to recurrent attacks of pneumonia.

5. It prevents complications.

6. It stimulates respiration, strengthens the heart action, and favors the performance in a normal manner of the various pulmonary functions, as regards both oxidation of the blood and elimination of carbonic acid and other respiratory products.

7. It relieves pleuritic complications.

8. It controls temperature.

PURULENT DISCHARGES FROM THE MIDDLE EAR.*

By NORTON L. WILSON, M.D.,
ELIZABETH, N. J.,
SURGEON TO THE NEWARK CHARITABLE EYE AND EAR INFIRMARY, ETC.

I present for your consideration at this meeting the subject of purulent discharges from the middle ear, and in support of what I am about to say desire to exhibit a few of the chronic cases taken from my clinic at the Elizabeth General Hospital. The discharge in these cases existed from three months to several years. The patients now not only are rid of the offensive discharge, but can boast of new drumheads and a marked improvement in hearing.

This subject demands attention from every practitioner of medicine, for they are among the most disgusting and troublesome cases with which we come in contact; of course, I refer especially to the chronic cases.

Inflammations of the middle ear are the most frequent of all aural affections, and purulent inflammations, if properly treated from the beginning, as a rule can be cured, but if neglected, not only do they become disgusting to the patient and those with whom he is brought in contact, but they are a constant source of danger to life.

Suppurative otitis media may occur primarily, but in the vast majority of cases it is secondary to a catarrhal inflammation either in the tympanum or extending up from the nasopharynx. I have seen a simple acute catarrhal otitis media take on the purulent type shortly after rupture of the membrana tympani. This was probably due to infection, and I may say that I am of the opinion that not a few of the purulent cases are just such as these. I mean to say that they were not originally purulent, but became infected with the pus organisms through the opening in the drumhead. The greater number of these cases are, however, infected through the Eustachian tubes, and pus is found on cutting through the drum membrane.

As it is my desire to make this paper practical rather than theoretical, I will not enter into the various causes of inflammation of the middle ear, but will attempt to show you that purulent inflammations of the middle ear are, as a rule, cured if seen from the beginning, and that much can be done for those cases existing for years.

There is no gentleman present who has not attended just such cases, and who has not seen the discharge cease and the drumhead heal while it was kept clean, and here lies the secret of success; but it is not enough to give a few simple directions to patients or attendants and leave the patient to get well. Too often we hear the physician say: "Oh, that is nothing; wash it out with a little salt water and it will get well!" And if it continues to discharge for some weeks, and he again sees the case, he will say: "Well, the child will outgrow it; do nothing further."

I hope you will pardon me if I become somewhat vehement, but to hear such language from an intelligent man is more than I can endure, and yet I have heard it time and time again. There comes to my mind now the case of a beautiful little girl whose parents received just such advice from one of our leading surgeons. I leave to your own imaginations the feelings which will spring up in that child's mind toward that surgeon when she buds into womanhood and learns that in all probability she could now enjoy and appreciate the delicate sounds from the violin or vocal organs had it not been for the advice of her medical attendant. Do we fully appreciate the awful responsibility which rests upon us?

The treatment of this disease is preferably symptomatic, with the object of preventing a further extension of the inflammatory process, as well as destruction of the tissues.

Professor Gruber has pointed out that the treatment should be from the beginning antiphlogistic, and (to quote him) "these measures must be of such a kind as are not likely to increase the hyperæmia of the deeper structures by impeding the return of blood from the parts. So long as hyperæmia is present, or suppuration having occurred and there is severe pain, then local bleeding is of much service."

In other words, if you see the case during the hyperæmic stage, before secretion has set in, or even after there is an exudation in the tympanic cavity before rupture of the membrane, a half dozen leeches applied in front and behind the ear will often abort the disease. The application of cold water or ice is recommended by some authorities to diminish the hyperæmia, but my experience has been that hot applications are much more agreeable and I think quite as efficacious. They probably act by aiding the return flow of blood from the inflamed parts. The hot-water bag is applied externally, or, what I like better, hot water is poured from a teaspoon into the external canal, thus keeping the hot water in contact with the membrana tympani. The most practical method of continuing the hot applications I have found to be by the use of the little device which I here show you. It is attached to the tube of a fountain syringe and the hot water flows gently through the inner tube and escapes, after filling the canal, from the expanded portion surrounding the inner tube. A piece of tubing may be attached to the outlet and conducted to a pail; thus you have a continuous current of hot water applied to the drumhead. I have seen a patient fall into a quiet sleep after a few minutes' application and awake practically well.

In constipated patients where you desire a derivative effect it is well to give a purgative at the beginning. My preference is for some of the saline purgatives, but in the case of children I make no objection if the mother prefers

* Read at the annual meeting of the District Medical Society of the County of Union, N. J., April 10, 1895.

some of the purgative teas now on the market, most of which depend upon senna for their action.

You must shun those drugs which are apt to cause vomiting and so increase the cerebral pressure. If the pain is severe and leeches and hot water fail to relieve, narcotics may be indicated, and I may say that about as many drugs have been prescribed for earache as are set down in the books for the relief of vomiting in pregnancy —oil of turpentine, sulphate of quinine, antikamnia, phenacetine, acetanilide, gelsemium, atropine, sulphate of calcium, and a host of others—but my experience has been that if you expect to relieve the pain by the use of a narcotic, use an opiate.

The inflammation of the deeper structures can not be cut short or abated by blisters over the mastoid process or on the neck. The pain, however, may sometimes be diminished by this means. I mention this because I not infrequently see blisters over this area. I have seen the pain diminished by a twenty-per-cent. solution of carbolic acid in glycerin introduced on absorbent cotton and kept in contact with the drumhead, thus anæsthetizing it, but I have also seen some damage done the membrane and am loath to use it.

I have as yet said nothing about cocaine, for the reason that it sometimes apparently relieves the pain and more frequently affords little or no relief. It must be used in at least a fifteen- or twenty-per-cent. solution, and I am still undecided, when relief follows its use, whether the cocaine or the heat affords the relief, as I have frequently seen the same effect follow the instillation of hot water; but many surgeons have given it as their opinion that it is due to the cocaine, and I therefore use it.

Complete rest, both mental and physical, should be insisted upon, as well as strict regulation of diet.

If the pain is severe and none of the above-mentioned methods relieve it, gentle inflation with the air bag will often bring relief for at least a short time. If the pain still continues, incision of the drum membrane, even though there may be no suppuration present, will often give relief, especially if the flow of blood is encouraged for some little time.

If suppuration has been already established, or if the membrane is bulging from serum, the contents of the tympanic cavity must be evacuated as soon as possible, and if this can not be brought about through the Eustachian tube then the membrana tympani must be incised. Paracentesis not only evacuates the pus but reduces the hyperæmia, and the pain is abated. After incision it is well to blow out the middle ear through the Eustachian tube and thus force out any matter which may be lodged behind the drumhead. So long as pus continues to be formed in the tympanic cavity the perforation should be kept open.

Here let me say a word or two in regard to the operation of paracentesis. It is my habit to drop into the ear a twenty-per-cent. warm solution of hydrochlorate of cocaine, but again I must say that I am not fully persuaded that it has the benumbing effect spoken of by some authorities. This is allowed to run out, and the external canal is filled with a warm 1-to-1,000 bichloride solution, thus disinfecting the canal. As a general rule, the incision should be made in the lower half of the membrane and be sufficiently large so that the exudation may freely escape. This may be done with a paracentesis needle or, what the writer prefers, a Graefe cataract knife.

The ear must now be syringed gently as often as is necessary to keep it free from pus, and plenty of water should be used. Not only are attendants often satisfied by dropping in a few medicine-dropperfuls, but quite as often the attending physician assents to the use of a small glass syringe, which is inefficient not only because of its capacity, but the make-up of the instrument unfits it for this particular use. The syringe should be of at least one-ounce capacity, and with a ring at the end of the piston, which greatly facilitates its use. The hard-rubber syringes are the most practicable because of their durability, but there is a syringe made of glass which answers every purpose, and is retailed at the drug stores for twenty-five or thirty cents. I have used during the last year the little device already shown you. The advantages of this instrument are that you are not obliged to remove it from the ear until you have finished the syringing process. It also does away with the air bubbles which sometimes are sucked up with the barrel syringe, and which when forced into the ear frighten the patient, especially if a child.

The fluid injected should be sterilized with warm water alone, or with some of the following: One teaspoonful of table salt to a pint of sterilized water, one teaspoonful of boric acid to a pint of sterilized water, or two ounces of a concentrated solution of electrozone to one pint of warm water; this is a solution of salt water with an electric current passed through it. This latter solution has decided germicidal powers, which I have proved by experimentation, and I much prefer it to peroxide of hydrogen, except in cases where I desire to get the mechanical effect of the latter, and especially where the case hangs on for several weeks. After each syringing the canal should be carefully dried and a plug of cotton introduced into the external canal. It is important to force out all the pus from behind the drumhead by means of the air bag, especially if the discharge is thick and tenacious; of course, there is some danger in so doing of driving some of the exudate into the mastoid cells, but the results obtained by this method counterbalance any of the dangers which may otherwise arise. If, however, the inflation produces severe pain, it had better be discontinued.

I have gone somewhat into detail in the treatment of acute cases, and I hope you will pardon me for what appears to be superfluous talk, but it is attention to details which brings results in these cases.

If I may still trepass upon your time and good nature, I will add a few remarks upon the treatment of the chronic cases.

I am convinced that, if the acute cases are properly handled, we shall have but few chronic ones to treat. Barker, of London, has shown that the mortality from acute and chronic middle-ear diseases of this nature reaches two and a half per cent., and many of our best life-insurance

companies reject applicants because of chronic discharges from the middle ear.

It therefore becomes necessary to look after this serious affection, and I ask your further indulgence while I speak briefly of these cases. In chronic middle-ear suppuration the continuance of the process is due to various causes, the most important of which are:

1. The development of granulation on the mucous membrane of the tympanic cavity.
2. The retention of masses of exudation.
3. Lesions of the bony walls of the cavities.
4. Disease of the nasopharynx.

One or all of these conditions may be present in a given case.

The treatment, and I may add the prognosis, of these chronic cases depends largely upon the conditions found. The cases following scarlatina, diphtheria, and tuberculosis are the most destructive, and you will often find no drumhead, or a small rim inserted in the ring. The first point to be attended to is the thorough removal of all secretions and *débris* which tend to promote suppuration and prevent the direct application of remedies to the diseased tissue. The middle ear may be cleansed in several ways—first, by syringing through the external meatus, as described above, or by the aid of a tube introduced through the perforation, and this latter method is made more satisfactory when the exudate is thick, and especially if you wish to wash out the attic. Second, by inflation of the middle ear, either by Politzer's method or by means of the Eustachian catheter, through which you may force air or liquid. Third, by aspiration with Siegle's pneumatic speculum. Fourth, by dry cleansing by means of absorbent cotton.

In using the syringe I prefer the glass tip already shown, and use but little force, which, of course, is regulated by the height of the bag. If giddiness or pain is caused, the injection must be discontinued. I inject at one sitting from twelve to sixteen ounces of salt water or boric-acid water, and repeat this three or four times during the day. If the discharge is offensive, I use a one-half per-cent. solution of carbolic acid, a five-per-cent. solution of permanganate of potassium, or, if necessary, a 1-to-1,000-bichloride-of-mercury solution; but this must be used with care, and I do not allow the patient to use it at home. Here again I prefer a fifteen-per-cent. solution of electrozone, which is harmless if swallowed. I am in the habit of instilling into the ear a twenty-five-per-cent. solution of neutral peroxide of hydrogen, and forcing out with the Politzer bag any remaining pus. Again, it is my habit to use the peroxide for its mechanical effect in forcing out the pus, rather than for its antiseptic powers, syringing so that the tympanum is freer from pus.

If it can not be removed in this way, you will be obliged to use the tube inserted into the tympanum, and, by means of the little dropper which I here show you, you can alternately fill and suck out from the middle ear any material which may be loose. I rarely use the third method spoken of, because I find the others answer every purpose, although it affords you a means of escape should you be obliged to resort to it.

The last method spoken of is drying with absorbent cotton. When you can not syringe because of the unpleasant effects, giddiness, etc.—and I have seen patients become semi unconscious from this cause—the middle ear may be mopped out and a little alcohol dropped into it. This is but the first step in the treatment. If the perforation is very small and you can not cleanse the middle ear thoroughly, it is better to enlarge the opening.

If polypi or granulations are present, they must be removed. If exudations of epithelium and *débris*, which form what is known as cholesteatoma, are present, they must be got rid of.

If dead bone is present, whether it is the ossicles or the bony wall, it must be taken away.

And last, but not least, although it is probably overlooked oftener than any other complication, the nasopharynx must receive its share of attention.

It is needless to apply remedies to the tympanic cavity if a nasopharyngeal catarrh exists, or the source of the aural complaint remains unchecked. So likewise in cases of constitutional disease, such as syphilis or scrofula, unless general treatment be superadded to the local measures, a good result can scarcely be expected.

Conditions of general debility and anæmia will also require attention.

In conclusion, I desire to say that, for a description of the various operative procedures, you will find them in any of the text-books on the subject, and I have thus purposely omitted them. One word to those of the profession who should be so unfortunate as to have a disease of this nature. There are cases on record where the surgeon who had a discharging ear infected a number of his lying-in patients, and it seems to me that it is a serious question whether or not a surgeon or nurse thus affected should attend surgical or midwifery cases.

Purulent Metastatic Ophthalmia; its Ætiology and Prognostic Significance. Second Part.—Axenfeld (*Arch. für Ophthal.*, xl, 4) here takes up the consideration of purely bacterial plugs which are often found in capillary embolisms. They may arise in four ways: 1. From endocardial vegetations, the most frequent source. 2. Directly from the veins coming from the source of infection. 3. In cryptogenetic septic pyæmia without endocarditis or foci in the lungs, a formation of such compact masses of cocci in the blood itself may well be aided in their formation by some other clot formation. 4. It is possible that at the point of metastasis the cocci have become developed into a mass of zooglœæ by increase and proliferation of individual microbes. Axenfeld draws the following conclusions: Purulent metastatic ophthalmia, such as is seen in the various forms of pyæmia, is complicated by ulcerative endocarditis in about a third of the cases. In puerperal and surgical cases there is almost always extensive inflammation at the point of infection, together with purulent thrombophlebitis present. Metastatic ophthalmia is bilateral in about a third of the cases. When this occurs in the puerperal woman it signifies a fatal termination of the case. Unilateral metastatic ophthalmia usually accompanies slighter cases of pyæmia. It is not uncommonly the only demonstrable metastasis of slight pyæmic processes in the body.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. APPLETON & Co. Edited by FRANK P FOSTER, M. D.

NEW YORK, SATURDAY, MARCH 28, 1896.

THE IRRITANT ACTION OF SALICYLIC ACID ON THE AIR-PASSAGES.

IRRITATION of the nasal, pharyngeal, and bronchial mucous membrane as the result of the inhalation of air laden with particles of salicylic acid or of an atomized solution has been mentioned by a number of writers, but Dr. Ludwig Ebstein, who has an article on the subject in the *Wiener klinische Wochenschrift* for March 12th, remarks that he has found reported only one instance of a definitely observed case in which the phenomena were described, namely, a case of hæmorrhagic pharyngitis and dysphagia recorded by Wolfberg. He himself has had the opportunity of observing a case, and he embodies a report of it in his article.

The patient was a man, sixty years old, a maker of preserves. For two years he had suffered with a tormenting cough, by day as well as by night, accompanied by difficult expectoration of a very thick, gray mucus. In April, 1895, his condition became so aggravated that there was often dyspnœa in the daytime, the cough increased in intensity, and every night he was suddenly awakened with a feeling of suffocation, so that he had to resort to the inhalation of steam, whereby he was enabled to cough up with difficulty a scanty, thick secretion, and the dyspnœa was rendered more tolerable. Up to the middle of September, when Dr. Ebstein first saw the man, the symptoms mentioned kept on increasing, together with a sense of dryness. The whole nasal mucous membrane was then of a dusky-red color, with a very scanty secretion, and the nasopharynx showed the same appearances. The pillars of the fauces appeared as inflamed swellings which were thrown into horizontal folds when swallowing movements were executed. The upper part of the larynx showed nothing abnormal beyond moderate inflammatory redness and swelling, but the vocal cords showed a striking change in the neighborhood of the vocal processes—on the upper surface of each cord, projecting beyond its border, there was an œdematous, tumor-like swelling, and the two cords "smacked" perceptibly on phonation. The trachea, which was readily visible to a considerable depth, showed a uniform swelling of the mucous membrane, which was of a deep-red hue and covered here and there with thick, gray secretion. The swelling was so great as to produce a notable stenosis, reducing the calibre to the size of one's little finger. There was manifest stridor with each inspiratory and expiratory movement, and both these movements were prolonged. There were dry, piping murmurs in all parts of the chest. The diagnosis arrived at was that of bronchitis sicca with slight emphysema.

The swelling of the tracheal mucous membrane was somewhat reduced by five days' inhalations of a spray of a weak solution of sulphate of zinc, but expectorants had not the slightest effect on the thick bronchial secretion. Inhalations of atomized solutions of sodium bicarbonate, sodium chloride, etc., served—so the patient said—only to increase the sensation of dryness. Finally, iodide of potassium was prescribed, as recommended by Cantani, and proved to be most efficacious; the secretion became thinner and the swelling of the tracheal mucous membrane grew manifestly less pronounced. In short, at the end of four weeks the man was entirely free from his troubles. But in five days after his returning to his work he had a relapse, and then for the first time it came out that he was in the habit of handling salicylic acid in his occupation. A resumption of the treatment accomplished a cure again in the course of three weeks. Then the man gave up the use of salicylic acid, and he had no further return of the trouble. Although he had employed the acid for years, it is noteworthy, says Dr. Ebstein, that the pronounced aggravation of his symptoms had followed close upon his giving up the use of the crystalline acid and using the amorphous form instead.

A NEW DEVICE FOR FLAP CRANIOTOMY.

No doubt the saw and the chisel have their disadvantages as instruments with which to make the section of the cranium in the operation of making a flap of that structure. These disadvantages are briefly set forth by a Swedish surgeon, Dr. Karl Dahlgren, in the *Centralblatt für Chirurgie* for March 7th, and he then proceeds to describe an instrument that has been devised and patented by a Stockholm instrument-maker. It is a somewhat ponderous cutting forceps of peculiar construction. The branches do not cross, but, as in the familiar glove-stretcher, approximation of the handles causes the blades to diverge. The lower blade, the heavier of the two, rests on the skull. A slit in it extends from its free extremity backward about halfway to the joint. In this slit plays a cutting hook which is hinged to the upper blade When the instrument is in place, the hook drops through the opening made by a small trephine, and the instrument is advanced so that the hook engages under the bone. Compression of the handles causes the hook to cut its way out, carrying with it a little fragment of the skull. The pressure is then relaxed and the instrument again advanced in the line of section as before, and so on until any required section has been made.

It is easy to understand that this is an efficient instrument, and that it may be made to do its work with considerable rapidity. We doubt, however, if it will be found to have any great superiority over the rongeur, especially if the rongeur has narrow blades. Moreover, it seems as if the lower blade of the Swedish instrument must make so much pressure on the periosteum as to give rise to unnecessary and injurious crushing of that structure along the line of section. The instrument unquestionably shows ingenuity, neverthe-

less, and Dr. Dahlgren says that operators who have tried it have declared themselves very much pleased with it.

THE CASE OF DR. KERSHNER.

So long as President Cleveland still held for consideration the finding of the court martial in Medical Inspector Kershner's case, including his sentence of dismissal, the expectation was very generally entertained, we think, that executive sanction would be withheld from the court's conclusion. This expectation was reasonable. It was founded not only on the merits of the case as they were commonly understood, but also on the fact that such a length of time had been suffered to pass without the final word having been said. Now, however, that the sentence has been approved of there remains nothing but regret on the part of Dr. Kershner's well-wishers—regret that an officer with a long record so irreproachable up to the bringing of this accusation should have been convicted, on what seemed insufficient evidence, of the offense charged. We must assume that in dealing with this case Mr. Cleveland had to take into account many considerations which bore upon other matters than the deserts of the officer who was under conviction, and all that we know of the president's character warrants the inference that he had no wish to deal harshly with an officer of Dr. Kershner's long service and honorable standing. This inference is further supported by the deliberation with which the president has acted. We deplore the result all the same. While, in common with the great mass of the medical profession, we sympathize deeply with Dr. Kershner, we can only hope that his dismissal from the service will not have the effect of confirming the widespread impression among physicians that the medical officers of the navy are despised and ill treated by the line officers, and that the government winks at this state of things. We do not say that it exists; indeed, we have known gentlemen of the medical corps of the navy to deny it positively, and that, too, very recently. Our own idea of the matter is that any antagonism there may be between officers of the line and those of the staff is rather the expression of individual dislike than of any settled ill feeling between class and class. Nevertheless, the opposite impression, as we have said, is widely entertained, and it doubtless has its effect in preventing the ranks of the medical corps from being filled. We repeat, we can only hope that Dr. Kershner's hard experience will not strengthen it.

MINOR PARAGRAPHS.

PERIODICAL FLUCTUATIONS IN THE FUNCTIONAL CAPACITY OF THE CEREBRAL CORTEX.

Stern (*Arch. f. Psychiat.*, xxvii, 3; *Ctrlbl. f. inn. Med.*, Feb. 29, 1896) applies the term "Schwankungen" to certain defects of brain action in two men who had had injuries of the head. At times the brain acted almost normally, then again it was well-nigh inoperative. The succession of the two conditions was quite regular, and the attacks lasted only a few seconds. The phenomena observed during the suspension of cortical activity were the following: Diminution of the cutaneous sensibility to pain, of the temperature sense, of the sense of touch, of the sense of locality, of the sense of movement, and of acuteness of vision (as well for white light as for individual colors); a concentric narrowing of the visual field; reduction of the acuteness of hearing, smelling, and tasting and of the cutaneous, mucous, pharyngeal, and patellar reflexes; intermitting ataxia and lowering of motor power; Cheyne-Stokes respiration; sluggish reaction to acoustic stimuli and to faradaic stimulation of the skin, with reduction of central vision; difficulty of coherent spontaneous speech, mimicking speech, grammatical expression, reading aloud, and correct writing, copying, and writing from dictation; and weakness of the memory and of the intelligence.

Among the objective signs of the attacks the author includes the changes in the reducible functions, such as the gait, the behavior of the cutaneous and mucous-membrane reflexes, and the reflex defensive movements. They are not to be classed as manifestations of pathological fatigue, he says; the cause of them all is to be found in disturbances of the cerebral cortex. Ophthalmoscopic examination did not show any relation between them and circulatory disturbances. Finally, the affection seems to be progressive.

THE *VIRGINIA MEDICAL SEMI-MONTHLY.*

Beginning with the April issues, the *Virginia Medical Monthly*, it is announced, is to be published twice a month and to have the title that forms the heading of this paragraph. The journal has had a long and creditable career, and we are glad to learn of this evidence of its continued prosperity.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending March 24, 1896:

DISEASES.	Week ending Mar. 17.		Week ending Mar. 24.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus	0	0	2	0
Typhoid fever	10	1	7	3
Scarlet fever	138	5	140	8
Cerebro-spinal meningitis	4	5	1	1
Measles	511	28	508	32
Diphtheria	200	33	222	35
Small pox	0	0	0	0
Tuberculosis	90	129	279	136

The Chamber of Commerce and the Academy of Medicine's Library.—It is gratifying to find that a number of the prominent members of the New York Chamber of Commerce have undertaken to assist the academy in its endeavor to raise a fund for the library. A circular distributed among the members of the commercial organization says:

"In order that the library may be supplied with the current publications necessary to maintain its efficiency a fund of $100,000 is required. Without this addition to the library the younger members of the profession will not be able to keep up with the current developments in the line of their work, and the public will be deprived of the benefit of the latest scientific and therapeutical discoveries. The medical profession, as represented in the academy, is engaged in un-

remitting and gratuitous labor among the poor, and its members have also unselfishly and successfully exerted themselves to promote public health, and to protect the city against epidemics of contagious diseases, notably during the threatened cholera invasion in 1887, and again in 1893, when the academy was called upon to investigate and reform the quarantine establishment of this port, which had become dilapidated, and had, therefore, ceased to be a protection against the dangers of contagion with which we were menaced. All these services were rendered without compensation, and oftentimes at great personal sacrifice."

The Cartwright Lectures.—A committee consisting of Dr. D. Bryson Delavan, Dr. William K. Draper, and Dr. Samuel W. Lambert announces that this year's course of the Cartwright Lectures of the Alumni Association of the College of Physicians and Surgeons (Medical Department of Columbia University), New York, will be given by Dr. George S. Huntington, professor of anatomy in the college, as follows: *First lecture*, on Wednesday evening, April 8th, on The Morphology of the Ileo-colic Junction and Large Intestine in Vertebrates; *second lecture*, on Wednesday evening, April 15th, on The Evolution of the Human Cæcum and Vermiform Appendix, and the Probable Lines of Derivation of the Corresponding Structures in the Other Vertebrates; *third lecture*, on Wednesday evening, April 22d, on The Morphology of the Bronchial System and its Relation to the Pulmonary Vascular Supply in Mammalia. The lectures will be given in the Hall of the New York Academy of Medicine, No. 17 West Forty-third Street, at 8.15 o'clock.

The Late Dr. Alexander S. Hunter.—The Medical Society of the County of New York's special committee to prepare resolutions on the death of Dr. Alexander S. Hunter has offered the following:

The Medical Society of the County of New York hereby records with profound sorrow the lamented death of its fellow-member, Dr. Alexander S. Hunter, which took place on February 14, 1896, at his residence at Spuyten Duyvil, New York city.

Dr. Hunter was twice elected to the office of president, and for many years was a member of the board of censors; under his wise guidance and through his judicious counse, the Medical Society of the County of New York progressed in honor and maintained its prosperity to a marked degree.

A genial friend, a thorough student, a careful diagnostician, a faithful physician, the society and the community have suffered an irreparable loss.

Resolved, That a copy of these resolutions be published in the medical press and also transmitted to the family of the deceased.

[Signed.] Henry E. Crampton, Daniel Lewis, John S. Warren, } *Committee.*

The New York Graduates' Society of McGill University will hold its first annual dinner on the evening of Tuesday, April 7th, at the Hotel Savoy.

The Ohio Board of Medical Registration and Examination.—Dr. Charles A. L. Reed, of Cincinnati, has been appointed by Governor Bushnell a member of this newly created board.

An Unkind Suggestion.—The *Kansas Medical Journal* quotes the following from the *Pacific Record:* "If by tapping a horse filled with diphtheria bacilli can be obtained a cure for the disease, why shouldn't we tap an old Kentucky colonel and get a toxine that would knock the gold cure out of sight?"

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the two weeks ending March 21, 1896:*

Dubose, W. R., Surgeon. Detached from the Naval Academy and ordered to the U. S. Steamer Terror.

Owens, Thomas, Surgeon. Placed on the retired list, March 10, 1896.

Parker, J. B., Medical Inspector. Ordered to duty in charge of the Naval Hospital, Widow's Island, Me., in addition to present duties.

Harmon, G. E. H., Surgeon. Detached from the Naval Dispensary at Washington and ordered to the Naval Academy.

La Motte, H., Assistant Surgeon. Detached from the Naval Hospital, Chelsea, Mass., and ordered to the Receiving-ship Franklin.

Lowndes, C. H. T., Passed Assistant Surgeon. Ordered to the Washington Navy Yard.

Rixey, P. M., Surgeon. Ordered to the Naval Dispensary at Washington.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the Sixteen Days ending March 16, 1896:*

Hamilton, J. B., Surgeon. Granted leave of absence for four days. March 16, 1896.

Irwin, Fairfax, Surgeon. To inspect service at Havana, Cuba, and quarantine stations in the South. March 2, 1896.

Carrington, P. M., Passed Assistant Surgeon. Granted leave of absence for thirty days. March 16, 1896.

Nydegger, J. A., Assistant Surgeon. To report at bureau for instructions. March 6, 1896. To proceed from Washington, D. C., to South Atlantic Quarantine and assume command. March 7, 1896.

Prochazka, Emil, Assistant Surgeon. Granted leave of absence for ten days. March 11, 1896.

Board Convened.

Board to examine and report on schedule of subsistence for seamen on merchant vessels of the United States, to meet in Washington, D. C. March 16, 1896. Surgeon P. H. Bailhache (chairman), Passed Assistant Surgeon C. E. Banks and Passed Assistant Surgeon J. J. Kinyoun (recorders).

Society Meetings for the Coming Week:

Tuesday, *March 31st:* Boston Society of Medical Sciences (private).

Wednesday, *April 1st:* New York Academy of Medicine (Section in Public Health); Society of Alumni of Bellevue Hospital; Harlem Medical Association of the City of New York; Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond (Stapleton), N. Y.; Penobscot, Me., County Medical Society (Bangor); Bridgeport, Conn., Medical Association.

Thursday, *April 2d:* New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua, N. Y.; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington); Cuyahoga County, Ohio, Medical Society; Washington, Vt., County Medical Society.

Friday, *April 3d:* Practitioners' Society of New York (private); Baltimore Clinical Society.

Saturday, *April 4th:* Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society, New York (private); Miller's River, Mass., Medical Society.

Answers to Correspondents:

No. 442.—University of London, Burlington Gardens, W., London; St. Bartholomew's Hospital and College, West Smithfield, E. C., London; Charing Cross Hospital, Charing Cross, W. C., London; Guy's Hospital, St. Thomas's Street, Borough, S. E., London; King's College, Strand, W. C., London; London Hospital, Mile End, E., London; Middlesex Hospital, Berners Street, W., London; St. George's Hospital, Hyde Park Corner, S. W., London; St. Mary's Hospital, Cambridge Place, W., London; St. Thomas's Hospital, Albert Embankment, Westminster Bridge, S. E., London; University College Hospital, Gower Street, W. C., London; Westminster Hospital, opposite Westminster Abbey, S. W., London; West London Hospital, Hammersmith Road, W., London; Queen's College, Birmingham; Bristol Medical School, Bristol; Cambridge Medical School, Cambridge; Yorkshire College, Leeds; University College, Liverpool; Owens College, Manchester; University of Durham, Newcastle-upon-Tyne; Sheffield School of Medicine, Sheffield; Anderson's College, Glasgow; Edinburgh School of Medicine, Edinburgh; Glasgow Royal Infirmary, Glasgow.

No. 443.—The signs and symptoms which you give do not seem sufficient to warrant a diagnosis. The urinary findings do not necessarily indicate serious renal disease. Perhaps the long-standing appendicular trouble, with the digestive derangement that is apt to accompany it, is sufficient to account for the loss of flesh; moreover, the case may be one of so-called diabetes insipidus.

Births, Marriages, and Deaths

Married.

Page—Whitin.—In Whitinsville, Mass., on Wednesday, March 18th, Dr. Frank Wilfrid Page, of Boston, and Miss Grace M. Whitin.

Died.

Alison.—In Kingston, La., on Thursday, March 12th, Dr. Lockwood Alison.

Feeny.—In Stapleton, N. Y., on Friday, March 20th, Doris, daughter of Dr. John L. Feeny, aged two years.

Heyl.—In New York, on Saturday, March 21st, Dr. Theodore C. Heyl, of the United States Navy.

Johnson.—In Paterson, N. J., on Friday, March 20th, Mrs. Julia A. England, wife of Dr. Thomas M. Johnson, of Buffalo.

Letters to the Editor.

A SUCCESSFUL OPERATION FOR HERNIA ON AN INFANT.

Gallitzin, Pa., *March 24, 1896.*

To the Editor of the New York Medical Journal:

Sir: The case that I am about to report, while not just what Dr. Kelsey asks for in his letter published in the *Journal* for the 21st inst., may be of interest to some one.

On the 30th day of May, 1892, at 2 A. M., without assistance, except from the father of the child, I operated in a case of strangulated oblique inguinal hernia. The truss that I had fitted the child with previously had been left off the day before, and about 9 P. M. on the 29th vomiting began and continued until the hernia was reduced.

Under chloroform anæsthesia I could not reduce it as I had done a month before, and after short preparations I cut down, opened the sac, and replaced the cæcum and appendix in the abdominal cavity. This child, a boy, was born on the 21st day of the previous January, and was one hundred and twenty-nine days old.

The recovery was not eventful; it was complete in a week.

F. U. Ferguson, M. D.

Proceedings of Societies.

SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL.

Meeting of February 5, 1896.

The President, Dr. Parker Syms, in the Chair.

Vaginal Hysterectomy.—Dr. Frederick Holme Wiggin presented two uteri successfully removed by vaginal operation. The first had been removed from a patient, twenty-one years of age, suffering from double pyosalpinx. The interesting question connected with the case was regarding the propriety of doing hysterectomy in each case of this character. He felt that the opinion was gaining ground that where both tubes or both ovaries were diseased, it was better to extirpate the uterus. Personally, he had found that the additional shock resulting from the removal of the uterus was very slight, and the mortality had been even less than where the ovaries or tubes alone had been removed. Certainly, the convalescence had been much more smooth, and particularly free from nervous shock.

The second specimen had been removed from a woman, thirty-eight years of age, who had had two children and two miscarriages. About five months prior to admission to the hospital the menstrual discharge had become fœtid and had increased in quantity, and the patient had become cachectic. Examination had shown the uterus enlarged and the cervix indurated. The specimen of tissue removed from the uterus with a curette, when examined by Dr. E. K. Dunham, had proved to be a superficial carcinoma. Examination of the uterus after its removal had shown the carcinoma to be very superficial and limited in extent, and had indicated that the disease was in its incipiency. The case was instructive, as showing the importance of being on the alert for malignant disease in the early stages. He thought that where there was any doubt about the malignant nature of a growth, the patient should have the benefit of the doubt and the uterus should be extirpated. Both the cases just reported had been operated upon as follows: Having made the posterior incision, the Makenrodt incision had been made, beginning about one third of an inch below the meatus and incising the anterior wall of the vagina, dissecting both flaps laterally. This method seemed to give a much larger field for operation, and hence made it much easier to tie the ovarian arteries and to avoid the uterus. This same subject had been brought up by Dr. Vineberg before the New York Obstetrical Society last winter, but the speaker said he had been unaware of this until after he had adopted this procedure.

Dr. C. C. Barrows said that the first one of the specimens

indicated that the operation had been done in a very thorough and cleanly manner, and that in all probability the patient would make a very rapid and permanent recovery. Had the uterus not been removed, the patient would probably have to return again and again for curetting or other treatment. It seemed to him that this point regarding the removal of the uterus by vaginal hysterectomy, along with the appendages when these latter organs were hopelessly diseased, had become pretty well settled in the mind of the gynæcologist as the correct procedure. Vaginal hysterectomy appealed strongly to the gynæcologist on account of the comparative freedom from shock and the rapidity of convalescence, but for cases of carcinoma it seemed to him that the vaginal operation was an imperfect one. In the vaginal operation the uterine arteries were ligated close to the uterus, leaving behind the contents of the pelvis, except the uterus, and sometimes the tubes and ovaries. It was interesting to observe how rapidly the pelvic glands became infected when there was only very little carcinomatous deposit in the cervix. About two years ago Dr. Polk had brought before the Obstetrical Society a mode of procedure which had seemed to hold out better prospects of success than vaginal hysterectomy—suprapubic hysterectomy, with ligation of the uterine arteries outside of the ureters and close to the pelvic wall. In this way the malignant disease could be removed from the pelvis as thoroughly as it could be removed in operations for carcinoma of the mammary gland. He had been particularly pleased with the technics and with the results of this operation as employed by Dr. Polk. The folds of the broad ligament were separated until the internal iliac artery was reached, where it divided into the anterior and posterior branches. We knew that the ovarian artery sprang from the anterior branch of the internal iliac shortly after its bifurcation, and that, given off at the same time or in close juxtaposition, the superior vesical artery originated. If these vessels were tied outside of the ureter, close to their emergence from the anterior branch of the internal iliac artery, the field of operation in the pelvis would be perfectly bloodless. This method had been employed of late by other surgeons. They had added to the procedure by introducing a stylet into the ureters. This seemed to the speaker entirely unnecessary to one familiar with the anatomy of this region, to say nothing of the danger of causing inflammation of the ureters.

The Topical Treatment of Acne.—Dr. E. B. Bronson read a paper on this subject. (See page 401.)

Dr. George T. Elliot said that he had been glad to hear a paper on acne which was based on modern pathology, and not on the traditions handed down from the middle ages. Acne being an affection of the sebaceous glands located almost entirely on the face, that portion of the body especially exposed to infection with micro-organisms found in the dust and air, the local nature of the disease would be certainly suggested. The causes of acne had been well brought out in Dr. Bronson's paper, and he agreed with him. Up to the last few years it had been the custom to accuse the internal complications as being the only causes of acne. Almost all of the ills to which flesh was heir could be associated with acne, but this association was due to the fact that these ills were apt to develop just at that period of life in which acne most frequently made its appearance. That, however, did not mean that they were the causes, and he had always looked upon these diseased conditions of the internal economy as simply predisposing factors. In other departments of medicine and surgery one was accustomed to give serious consideration to the influence of predisposing factors in producing the special "soil" suitable for the development of disease, and why should not the same be done in diseases of the skin? Modern pathology had shown that a very large number of the cutaneous diseases were due to local causes, and not to disturbances in the general system, except in so far as these resulted in the formation of a favorable soil. The speaker agreed with the author of the paper regarding the local treatment of acne with one exception—*i. e.*, the curetting. He had never been able to obtain any good result from curetting. He had tried this treatment alone, and also in combination with other remedies, but had not been able to observe any good effects. In his opinion the treatment should be guided by the presumption that acne was an infectious process; that it was due to the inoculation of staphylococci or of those particular germs which were concerned in the formation of the comedo. In the next place, our treatment should have reference to those general conditions which made the soil favorable for the growth of such micro-organisms. We could emphatically say that there was not a single remedy given internally which had any special value in the treatment of acne; the whole treatment was a common-sense and symptomatic one, founded on the principles just laid down. There was a form of eruption, however, appearing frequently on the face, which was usually described as acne. This would come out suddenly, overnight perhaps, and was very commonly connected with disturbances of the menstrual function, occurring particularly at the menstrual periods. Microscopical study had convinced him that this eruption was not true acne, but a form of erythema, and such cases could naturally be completely relieved by such internal remedies as would quiet the reflex irritation from the uterus and ovaries; but a genuine acne he had never seen cured by any internal treatment devised.

Dr. A. R. Robinson said that he agreed thoroughly with what had been said by the writer of the paper and by the last speaker regarding the predisposing and exciting factors of acne. The individual lesion was, however, of very short duration—five to eight days—and hence the treatment of this lesion did not seem to him so important as the treatment of the predisposing factors. Of course, where there was a pustule of any size, which would result in scar tissue and deformity, local treatment became more important. It also became important in so far as such an inflammation would affect the tissues in such a way as to give rise to a favorable ground for the growth of the special organisms of acne. While he believed that all the pustular inflammations of acne vulgaris depended upon micro-organisms, he thought if we recalled the fact that these organisms were omnipresent, and yet that very few persons had acne vulgaris, it seemed evident that these organisms were only exciting causes, and less important than the predisposing factors. Anything which would change the nutritional condition of the areas on which acne ordinarily developed would be capable of acting as a predisposing cause. The main factor was a hyperkeratosis of the surface, and extending into the sebaceous follicles. This condition might arise from a variety of causes, and among these, in his opinion, were many general conditions of the system. As a result of the hyperkeratosis the comedo was developed, and hence a favorable soil produced for the micro-organism of acne. But in addition to this factor there was another factor—a physiological change. If the sebaceous matter could be freely discharged from the follicles, then there would be no proper soil for the growth of these micro-organisms. But in many cases of acne there was an oily condition of the skin—the opposite of the horny condition described in the paper. A want of tonicity in the unstriped muscular bundles was also a predisposing factor, because it

in itself tended to impede the discharge of sebaceous matter. From these considerations it was evident that we should take a very broad and comprehensive view of the ætiology of acne. The speaker said that he had found very little benefit from curetting, and had practically abandoned it. He preferred to use soap and water to thin the horny layer, and the use of some application to soften the comedo. In addition to this, massage of the face and steaming would successfully combat the hyperkeratosis. For successful treatment all the predisposing factors must be removed.

Dr. L. Duncan Bulkley said that there were certainly hyperkeratosis and a collection of material in the follicles in the condition under discussion—the acne of young people. He thought that if a rather sharp curette was properly used it would accomplish a great deal of good. The best comedo extractor was the small cylinder or tube sold in most of the stores. A small lance or cataract needle was an excellent instrument for use in acne, as its thin and very sharp edge caused practically no pain. With proper handling none of the procedures mentioned should cause scarring of the face. His idea in using the hot water was of its acting as a sudden stimulant, and accordingly a handkerchief wet with very hot water was held for a moment only on each spot.

The speaker said that he felt with Dr. Robinson that there must be some constitutional condition back of the hyperkeratosis which was the ultimate cause of the acne. He had carefully watched certain patients and noted the general condition for many years, and in this way had become convinced of the truth of this statement. The failure of muscular tissue seemed to him one of the most important agents in bringing about this faulty condition of the skin and glands. He had found much benefit from toning up the blood-vessels by the administration of digitalis. But so far only one form of acne had been considered. What was to be said of acne rosacea and indurata, which were so evidently dependent upon the condition of the internal organs? His experience had shown that as a rule not enough attention was given by physicians, in the treatment of acne, to the condition of the bowels, and particularly to the quantity and condition of the urine. Most of his patients with acne received remedies calculated to stimulate the activity of the bowels and kidneys. Of course, it was absurd to use arsenic or any other drug under the belief that there was a specific for this disease. He would admit that cases of acne in the young were harder to treat than other cases, such as acne rosacea and acne indurata.

Dr. Bronson said that it was evident that physicians were not yet agreed as to the essential cause of acne. There could be little question that the local cause was to be found in the comedo, but the question then arose as to the cause of the comedo. A sufficient cause for this existed in an anomaly of growths in and about the follicle—namely, the hyperkeratosis. If nothing back of this could be found that was remediable, then the hyperkeratosis was the first and most important thing to treat. According to Unna, the "acne bacillus" was the primary cause, but the speaker was inclined to believe that, however important ætiologically the element of parasitism might be, it was a factor that was secondary to the hyperkeratosis. He could not see how either of these causes, however, was to be affected by general treatment. Comparison had been made between acne and the so-called "acne rosacea." But they were totally distinct affections. The latter was clearly the result of reflex irritation, and was primarily a vaso-motor disease. The name acne for this disease had very wisely been dropped, and it was now known simply as *rosacea*. Here the indication for general treatment was obvious, as it might be in certain inflammatory exacerbations of true acne. But in acne, originating as it did in an anomaly of corneous growths, he could not see how general treatment was to remove this hyperkeratosis any more than it could an exuberant growth of hair on a lady's face or the development of common warts on a child's hand.

(*To be concluded.*)

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Ninetieth Annual Meeting, held in Albany, on Tuesday, Wednesday, and Thursday, January 28, 29, and 30, 1896.

The President, Dr. Roswell Park, of Buffalo, in the Chair.

(*Concluded from page 290.*)

The Early Diagnosis of Tuberculous Kidney.—Dr. Willy Meyer, of New York, in a paper with this title, referred only to that chronic form of tuberculous inflammation which ordinarily affected at first only one kidney. Among the first symptoms was renal colic, which was very commonly attributed to renal calculus. This error could be guarded against by a careful microscopical examination of the urinary sediment, or by a cystoscopic examination. The latter would often give a very characteristic picture—injection around one ureteral opening. Kelly's method of catheterizing the ureters was excellent in the female, and with Casper's ureteroscope this mode of examination could be readily conducted in persons of either sex. Early extirpation of a tuberculous kidney would effect a permanent cure.

The Symptoms and Diagnosis of the Indigestion of Starchy Foods.—Dr. Reynold W. Wilcox, of New York, in a paper with this title, said that the diagnosis rested on the existence of constipation, flatulence, various sensory phenomena, and constitutional disturbance, as well as upon the results of determining the ratio of the ethereal sulphates and the quantity of indican in the urine. Many cases of so-called "buccal dyspepsia" were due to imperfect mastication and the habit of taking fluids with amylaceous foods.

Congenital Dislocation of the Hip.—Dr. T. Halsted Myers, of New York, read a paper with this title. He said that the anatomy of the condition had become well known from many recent operations. Some cases appeared to be due to traumatism without malformation; in others the malformation was the prime cause. The chances of a cure were greatly improved by an early diagnosis, for before the changes secondary to walking had occurred reduction was comparatively easy and retention probable, since relaxation was most commonly found with anteversion and flexion of the femoral neck, and these were secondary changes. In three hundred and two cases of Hoffa's operation, or some of its modifications, the mortality had been between three and four per cent. The latest reports were much better. There had been no death in the last twenty-two cases of Broca, or in the last one hundred cases of Lorenz. The danger of the operation seemed to be dependent almost entirely on sepsis; therefore the utmost care in this respect was necessary. The manipulations of Paci should first be tried—*i. e.*, forcible flexion, abduction, rotation outward, and extension—as if to reduce a traumatic dislocation, and the limb fixed in an abducted position. After three or four months the patient might be allowed to walk with a protective splint. If this treatment failed after a fair trial, Lorenz's operation was indicated. Over eighty per cent. of his last hundred cases he considered successful, and in eleven out of the thirteen relaxations the head of the femur had passed upward under the anterior

superior spine, the most favorable position except that in the acetabulum itself.

Dr. Myers then exhibited a girl who had been first seen by him when she was three years and a half old. At that time the shortening was an inch and a half, and the telescoping and lordosis were marked, as was also the limp. The dislocation was reduced by Paci's method, and the joint subjected to rather severe manipulations with the hope of exciting adhesive inflammation. The limb was fixed in an abducted position without extension, as the speaker did not believe extension was indicated if the muscular retraction had been fully corrected at the operation. The spica had been removed about once a month, and the joint manipulated and again fixed in an abducted position. Five months later a splint had been applied, allowing of motion at the hip, knee, and ankle, but keeping the limb abducted and exerting pressure against the trochanter. This had been worn night and day for seven months, and the child allowed to walk about freely with a high shoe on the opposite foot. The shortening, the speaker said, was now less than a quarter of an inch, the joint was firm without telescoping, and motion was free in every direction. The child had walked for a week past without any apparatus for a part of each day, and no change could be found in the joint. The splint would be kept on most of the time for several months yet. In these cases, unless they were treated, the shortening, telescoping, lordosis, and limp steadily became worse as the child grew, and many of these children had pain. Many cases also of very marked deformity and disability had been recorded; hence the writer urged the adoption of active treatment rather than the old let-alone method.

A Discussion on the Present Status of the Surgery of the Brain.—Dr. Edward D. Fisher, of New York, opened the discussion. He said that the indications for operation were: (1) Traumatism; (2) localized epileptic seizures; (3) athetosis with or without epilepsy; (4) tumors; (5) abscess; (6) cerebral hæmorrhage; and (7) microcephalus. When athetosis was due to cortical irritation, the operation for removal of a portion of the cortex was indicated. Such cases were well-nigh hopeless, and this chance, slim as it might be, should be given to the patients. In operating on epileptics he favored the bone-flap operation, as this secured complete restoration of the skull. In cases of tumor he preferred the entire removal of the bone with the trephine and rongeur. He had made careful personal observations regarding the alleged shock produced by the use of chisels in such operations, but had been unable to find any clinical basis for such an allegation.

Dr. M. Allen Starr, of New York, took up the subject of *Brain Tumors*. He said that this portion of brain surgery was necessarily restricted by the difficulty in ascertaining the exact situation of the tumors and the difficulty in reaching them. Only a small percentage of cases were suitable for operation. The prognosis could be said to be absolutely good only in those cases in which the tumor lay on the cortex without invading it. It was best in sarcomata. Even cysts did not give such a good prognosis, because of their tendency to recur. These operations, he said, should be done only by those who had had considerable experience in this particular field of surgery.

Dr. Charles L. Dana, of New York, contributed to the discussion a paper entitled *The Value of Craniectomy for Imbecility and Epilepsy*. He said that in his own experience, out of fourteen cases, three patients had died, three had been improved, and eight had not been benefited by the operation. This treatment was best suited for the congenital idiot and the imbecile, but in the former the operation should be done under the age of four years, and in the latter before puberty. A cure was not to be expected, but occasionally there was a decided improvement in both the mental and physical condition. Personally, he had always used the linear operation with lateral branches. It certainly did not benefit by allowing more room for the development of the brain, as had been at first supposed by some, and he was inclined to attribute whatever improvement followed the operation to its profound disciplinary effect upon the idiot.

Dr. B. Sachs, of New York, continued this discussion by presenting a paper on *The Surgical Treament of Epilepsy*. He said that trephining or excision of cortical matter was justifiable only in the early stages, before degeneration had taken place. The operator should not be content with simply exploring down to the outer table by incision, for there might be within the skull an exostosis or a bony spicule causing irritation or pressure. He said that in New York operations for epilepsy were now not nearly so numerous as they had been a few years ago.

Dr. James W. Putnam, of Buffalo, said that two patients with microcephalus on whom Dr. Roswell Park had performed craniectomy had been wonderfully improved.

Dr. George Woolsey, of New York, reported his experience in eight operative cases. Although operative measures had not been resorted to in any of these cases until medical treatment had been given a fair trial, and it was evident that the mental condition was steadily growing worse, he could report a cure in only one of these eight cases. He preferred to operate with a chisel.

Heteroplasty with Celluloid to cover Defects in the Skull.—Dr. Willy Meyer, of New York, in a short paper with this title, described his efforts to use celluloid for protecting the openings made in the skull. He considered this material better than all others that had been proposed for this purpose, and there was no longer any difficulty in procuring it in plates of proper size and firmness.

Dr. Joseph Collins deprecated the pessimistic views that had been expressed in this discussion by most of the speakers regarding the value of operative procedures on the brain.

Dr. Floyd S. Crego, of Buffalo, said that certainly in his city the surgeons had met with better success in this department of surgery than the surgeons of New York, judging from their own utterances here. A common and very serious error was to neglect to keep up the medical treatment after such operations.

Dr. E. B. Angel remarked that there was no need of plates of celluloid, as the opening was sufficiently protected by dense fibrous tissue.

Nitroglycerin in the Treatment of Sciatica.—Dr. W. C. Krauss, of Buffalo, presented a paper with this title. (See page 273.)

Deficient Excretion from Kidneys not Organically Diseased, in Relation to some of the Disorders Peculiar to Women.—Dr. James H. Etheridge, of Chicago, delivered an address on this subject in which he called attention to the fact that many women could be promptly relieved of symptoms usually referred to pelvic disorder by treatment directed to correcting this condition of deficient urinary excretion. In many other cases it was an important adjuvant to the usual gynæcological treatment. He said that, in proportion to the bodily weight, the daily quantity of urinary solids would be found in practice to vary between the two extremes of 500 and 1,100 grains. Urinary solids, he said, were a lethal poison when retained in the system in sufficient quantity, and such poisoning showed itself chiefly through its influence on the nervous system.

The Value of the Comparative Method in the Study of Pathology.—This was the title of the anniversary address by the President. He said that he desired to enter a plea for the extension to the study of pathology of that method which had proved so successful in recent years in the study of languages. It would be well, he thought, to study the beginning of all pathological and physiological processes in the vegetable kingdom first. The address was chiefly devoted to the consideration of many highly interesting and instructive examples drawn from both the animal and vegetable kingdoms. In closing, he expressed the earnest hope that there would soon be a society where botanists and biologists, vegetable and human pathologists, might meet on common ground, and so foster by an interchange of ideas this study of comparative pathology.

Reorganization of the Coroner's System.—Dr. W. G. Macdonald, of Albany, presented a paper on this subject in which he showed the extravagance and utter inefficiency of the present system and the superiority of the "German system," in which each district had a district physician, a district surgeon, and a district judge. Our present system could probably be best remedied by the appointment of a medical examiner by the Appellate Division of the Supreme Court, thus removing the appointing power as far as possible from political influence.

Dr. R. A. Witthaus, Dr. Balch, and the Hon. Tracy C. Becker expressed similar views, and urged a concerted effort to secure a law embodying these features from the present Legislature.

The Development of Muscular Atrophy on a Basis of Old Infantile Spinal Paralysis, a Favorable Type.—Dr. W. Browning, of Brooklyn, presented a paper with this title. He said that he had observed quite a number of these cases in children. In addition to the usual history of limited poliomyelitis, there were certain sensory manifestations, such as "achings." An aggravation of the condition had been noticed as a result of exposure to cold, rapid growth, and the like. A relative and decided lasting improvement had been noted after appropriate treatment. The faradaic current often proved beneficial. In addition, there should be daily frictions of the parts, and the patient should be careful to wear warm clothing, and should be directed to carefully avoid prolonged exposure to cold, and, if so exposed, should take immediate measures to secure prompt reaction. By such treatment recurrent aggravations of the disorder could be prevented. As a rule, the part could be used. The lower extremity was less amenable to treatment than the upper extremity.

Neuritis complicating Dislocations of the Shoulder and Elbow.—Dr. M. A. Veeder, of Lyons, presented a paper on this subject. He said that the impairment of the muscles at the shoulder might result in spontaneous dislocation of the humerus when the limb was in certain positions. The extent of the damage to the nerves did not always make itself apparent for a considerable time. The traction on the axillary structures resulting from dislocation of the humerus might give rise to much trouble. Massage and electrical treatment were of service in the treatment of these conditions.

Some Notes on Trachoma.—Dr. M. L. Foster, of New York, under this heading, particularly objected to the perpetuation of the very vague term "granular lids," not only because of its vagueness, but more especially because it was popularly supposed to signify an incurable condition, and hence many persons were prevented from seeking advice that might lead to their relief.

Book Notices.

Text-book of Forensic Medicine and Toxicology. By Arthur P. Luff, M. D., B. Sc. Lond., Lecturer on Medical Jurisprudence and Toxicology in St. Mary's Hospital, etc. London and New York: Longmans, Green, & Co., 1895. Vol. I, pp. xii–416. Vol. II, pp. viii–360. [Price, $7.50.]

Forensic medicine is a subject that rather requires prolonged and exhaustive consideration. Though its presentation need not be too voluminous, it is scarcely possible, as with many another subject, to condense it very much without seriously impairing and even invalidating its usefulness. In Dr. Luff's work we have an excellent example of the proper amount of condensation, and one which is remarkable because it contains most of the valuable features of more pretentious works. Its comprehensiveness within reasonable limits is due to the excellent style in which it is written. It is not fragmentary or sententious, but it is clearly and forcibly written, without any unnecessary use of words and with an absolute freedom from discursiveness.

Volume I opens with a chapter on medical evidence, which, though based upon English law, is in its generalities none the less useful to others than English physicians. There follow chapters on the signs of death and post-mortem appearances, putrefaction, determination of identity, and post-mortem examination for medico-legal purposes. The remainder of the volume (some 300 pages) is devoted to a most able and inclusive consideration of poisons. Under each of the important poisons there are discussed symptomatology, treatment, post-mortem appearances, the fatal dose, the period elapsing before the occurrence of death, and tests by which the poison may be detected. The value of a systematic consideration like this is self-evident, and when it is added that the contained matter is well chosen, well presented, and generally ample, the value of these chapters may be inferred. The less common poisons are more briefly but not less satisfactorily presented; the matter on poisonous foods, however, is unsatisfying.

Volume II opens with a chapter on the determination of blood stains. Several chapters follow upon the medico-legal aspects of wounds, and then there is a chapter upon lightning, heat, cold, and starvation. Asphyxia is well given in two chapters, and seven are devoted to those matters which concern the organs of generation in a medico-legal aspect. Three chapters treat briefly, though well, of insanity, and with the shortest of chapters on life insurance the volume ends. Throughout the work legal examples are cited with sufficient frequency, and are apt and well chosen. The work as a whole is even and is highly to be recommended.

We can not refrain from commending its publication in two volumes. The objection on the part of medical publishers to producing books in more than one volume (save systems and major works) is strong, and frequently they issue books the size of which alone, regardless of contents, is sufficient to impair their usefulness. The work under notice might easily have been issued in one volume, but the two volumes are far more serviceable. We hope that so good an example may be heeded.

A Manual of Medical Jurisprudence and Toxicology. By Henry C. Chapman, M. D., Professor of Institutes of Medicine and Medical Jurisprudence in the Jefferson Medical College of Philadelphia, etc. Second Edition, revised. With Fifty-

five Illustrations and Three Plates in Colors. Philadelphia: W. B. Saunders, 1896. Pp. xv–17 to 254. [Price, $1.50.]

The second edition of this work requires no extended criticism, for it differs little from the first save in bibliographical and some few illustrative additions. Of these, the former are perhaps desirable, though we have always regarded the introduction of many references in small works designed for students as rather unnecessary, preferring to retain them for readers who require and who use them, and preferring, too, that students' books should be dogmatic. The revision of the work has been well done, and the greater use of italicized subheadings we regard as a distinct improvement. The publisher's work is far better than that of the first edition. Legal medicine is not a subject which well lends itself to condensation, but we nevertheless believe that the book may be of considerable service to medical students, for whose benefit it was written.

Syphilis in the Middle Ages and in Modern Times. By Dr. F. Buret, of Paris, France. Translated from the French, with Notes, by A. H. Ohmann-Dumesnil, M. D., Professor of Dermatology and Syphilology in the Marion-Sims College of Medicine, etc. In Three Volumes. Volumes II and III. Philadelphia: The F. A. Davis Company, 1895. Pp. xxvi–289. [Price, $1.50.]

Buret's little work has demonstrated two essential points: That syphilis existed in prehistoric times and that the European invasion at the end of the fifteenth century was not due to American contagion. Aside from these details, it offers documentary proof of the existence of the disease in ancient Babylon and Nineveh, and traces its history down to present times. The relations of the various epidemics are neatly drawn, and it is interesting to note that the Crusaders were partly responsible for making syphilis endemic in Europe. No mention is made as to the ætiology of the disease. Rather crude methods of avoiding infection *in coitu* are given at the end of the book.

The translation is, for the most part, clear, but a little too literal in some passages, as in the preface to Volume II. The book is well printed and has a copy of an interesting old print as a frontispiece.

Épithélioma primitif de l'urèthre. Par Melville Wassermann, docteur des Facultés de médecine de Paris et de Heidelberg, etc. Paris: G. Steinheil, 1895. Pp. 7 to 163.

This monograph is a review of the literature and clinical reports of primary epitheliomata of the male and female urethra and of Cowper's glands. The author has collected twenty cases of primary urethral epithelioma in the male, with twenty-three in the female, and has found but three reported cases of primary epithelioma of Cowper's gland, cases which he is inclined to regard as of urethral origin. He reports four cases of urethral epithelioma which he has observed. As to prognosis, it is, naturally, most gloomy, death or recurrence following in every instance. The treatment of the disease is surgical or palliative. The illustrations are, with one exception, excellently reproduced. A full bibliographical table is added to the monograph, in which American writers are given credit for their work in this field.

Atlas of Traumatic Fractures and Luxations, with a Brief Treatise. By H. Helferich, M. D., Professor at the University of Greifswald. With One Hundred and Sixty-six Illustrations after Original Drawings by Dr. Joseph Trumpp. New York: William Wood & Co., 1896. Pp. xvi–142.

The translation of Helferich's book on fractures and dislocations, without the name of the translator, is to be commended largely for its set of admirable plates gathered from various continental sources. The publishers have borrowed the plates of the European publishers and in this they have erred; for the nomenclature as printed on them is that of the German text-books and not every American student knows that *M.* stands for "muscle" and *N.* for "nerve": and we are not accustomed to speak of the "talus" or "clavicula." As to the text, it is in most instances clear and correct, though the translation has been made so rigidly that the work bears the "ear-marks" of a German clinic throughout. Though not to be compared with two American text-books with similar titles, this little treatise is a safe one for students to read and to study. The book-making is only fair, and typographical errors are not infrequent.

On Memory and the Specific Energies of the Nervous System. By Professor Ewald Hering. Chicago: The Open Court Publishing Company, 1895. Pp. 50.

Professor Hering, the distinguished physiologist recently called from Prague to the University of Leipsic, has said many a true word in science. In these two short essays he shows how the student of science may, as he himself puts it, throw aside his working apparel and offer the fruits of his labors to others. He is indeed "welcome in a festive garment."

The point of view taken by the author is physiological, the inductions of physical and psychological observation each contributing its share. It is explained that phenomena of consciousness appear to be functions of material changes of organized substances, and *vice versa*. With this hypothesis "modern physiology is enabled to bring the phenomena of consciousness within the domain of its inquiry without leaving the *terra firma* of scientific method." Memory, as usually understood, is the faculty of voluntarily reproducing ideas or series of ideas; but it is also involuntary and a faculty of unconscious, more even than of conscious life. Memory, in this broad sense, is the faculty the living organism has of accepting the qualities of its ancestors. "Is it to be wondered at that the things which organized matter has experienced on numberless occasions are impressed more strongly into the memory of a germ than the events of a single life? Every organized being of our present time is the product of the unconscious memory of organized matter."

Thus memory becomes the reproductive faculty. Finally, the author says nobly: "The conscious memory of man dies with his death; but the unconscious memory of Nature is faithful and indestructible. Whoever has succeeded in impressing the vestiges of his work upon it will be remembered forever."

The second essay is an eloquent defense of the theory of Johannes Müller, who named "the inherent function of certain nerves to communicate certain sensations which could not be produced otherwise to our consciousness the 'specific energy' of those nerves." The apparent uniformity of the sensory nerves and centres depends only on the twilight in which we grope.

If we knew the structure of the cell we might hope to solve the enigma of life, says the author. "The power of specializing and individualizing its functions is an inborn quality of living substance, and bears its best fruits in the nervous system. Experience and practice rest upon this specialization and individualization of the functions of the

different cerebral elements, and the energies of the nervous substance which are developed in the course of our life are the organic expression of our individual memory."

It has seemed best, for the most part, to let the book speak for itself. Comment or criticism is uncalled for; suffice it to say that the publishers have once more put not alone the professional but the thinking public under obligations.

Transactions of the American Microscopical Society. January, 1896. Eighteenth Annual Meeting, held at Cornell University, Ithaca, N. Y., on August 21, 22, and 23, 1895. Volume XVII.

In the annual report of the proceedings of the American Microscopical Society are presented the address of President Simon H. Gage, the leading papers read at the meeting, and the discussions on them. The president's address contains a plea for "physiological histology" which he defines by saying that "in studying an organism or its tissues, the investigator, to gain certain knowledge, must know all that is possible to learn concerning the age, health, state of nervous, muscular, and digestive activity; in fact, all that it is possible to find out about the processes of life that are going on and that have gone on when the study is made." Many interesting papers on botanical and animal histology are presented, including those on methods of imbedding, hardening, and fixing specimens. To judge from this well-prepared report, the last meeting of the society was an instructive and profitable one.

Report of the Scientific Study of the Mental and Psychical Conditions of Childhood. With Particular Reference to Children of Defective Constitution, and with Recommendations as to Education and Training. London: Published by the Committee on the Mental and Psychical Condition of Children.

This report, based on an examination of fifty thousand English school-children, is furnished by committees of the British Medical Association, the British Association, the Charity Organization Society, the Royal Statistical Society, the Sanitary Institute, and foreign representatives. The committees conclude that feeble-minded children and those that are dull at school should receive special education by specially fitted teachers in order that they may not become burdensome to society. The report also contains statistical tables with reference to feeble-mindedness, low nutrition, and mental dullness and nervous defects with reference to attendance at school and capacity for learning.

Les Sanatoria. Traitement et prophylaxie de la phtisie pulmonaire. Thèse pour le doctorat en médecine. Par le Docteur S. A. Knopf, de la Faculté de Médecine de Paris et de Bellevue Hospital Medical Collège, New York. Paris: Georges Carré, 1895. Pp. 206.

Although no great originality marks this work, it is a forcible and an excellent presentation of those means, both prophylactic and curative, on which medical science places the greatest reliance in its combat with tuberculosis. The first few chapters are introductory and concern the history of the treatment of tuberculous disease, the mortality of pulmonary tuberculosis, contagion, sanitary laws designed to limit the disease (in this chapter we are pleased to see fully presented the very admirable circulars of our own health board designed for popular distribution), and evidence, both pathological and clinical, of the curability of pulmonary tuberculosis.

The consideration of sanatoria for the treatment of tuberculous diseases occupies several chapters and may be considered the most important portion of the book. A number of sanatoria have been visited by the author, and of these the description is both interesting and valuable, not the least so being that of the sanatorium at Saranac. The author's views as to the construction of an ideal sanatorium occupy a chapter, and drawings and plans are presented. As to the value of these designs we agree, in the main, with the author. A short chapter follows on the features of hygienic and dietetic treatment in sanatoria. The further consideration of the treatment includes the matters of prolonged rest in the open air, respiratory exercise, graduated walks, hydrotherapy, food and alcoholic drinks, and a very noteworthy chapter on receptacles for sputum. Clothing, personal hygiene, climate, altitude, medicines and symptomatic treatment, moral and educational influences, and marriage receive brief though not insufficient attention, and an excellent chapter is devoted to sanatoria for the poor. On the treatment of tuberculosis the author presents a number of forcible conclusions which, though generally accepted already, are none the less useful from repetition.

The reading of Dr. Knopf's book will amply repay those interested in the subject, which class indeed should include all physicians.

BOOKS, ETC., RECEIVED.

Infantile Mortality during Childbirth and its Prevention. By A. Brothers, B. S., M. D., Instructor in Operative Gynæcology at the New York Post-graduate Medical School and Hospital, etc. William Furness Jenks Prize Essay of the College of Physicians of Philadelphia. Philadelphia: P. Blakiston, Son, & Co., 1896. Pp. viii–11 to 179. [Price, $1.50.]

Clinical Lectures on Abdominal Surgery and Other Subjects. By Charles T. Parkes, A. M., M. D., late Professor of Surgery, Rush Medical College, Chicago, etc. Edited by Dr. A. J. Ochsner. Chicago: The W. T. Keener Company, 1896. Pp. 477. [Price, $4.]

A Pictorial Atlas of Skin Diseases and Syphilitic Affections in Photo-lithochromes from Models in the Museum of the Saint Louis Hospital, Paris. With Explanatory Woodcuts and Text by Ernest Besnier, Physician to the Saint Louis Hospital, etc.; Tenneson, Physician to the Saint Louis Hospital; Hallopeau, Member of the Academy of Medicine, etc.; and Du Castel, Physician to the Saint Louis Hospital. With the Co-operation of Henri Feulard, Curator of the Museum, and Leon Jacquet, Secretary of the Dermatological Society of France. Edited and annotated by J. J. Pringle, M. B., F. R. C. P., Assistant Physician to and Physician to the Department for Diseases of the Skin at the Middlesex Hospital, London. London: F. J. Rebman. Philadelphia: W. B. Saunders, 1896. Part III. Pp. 55 to 82. [Price, $3 each part.]

Special Report of the Board of Health upon the Cholera Epidemic in Honolulu, Hawaiian Islands, in August and September, 1895.

The Twenty-fifth Annual Report of St. Catherine's Hospital, Brooklyn, 1895.

The Clinical Application of the Röntgen Rays. I. The Apparatus and its Use. By William Francis Magie, Ph. D., of Princeton. II. The Surgical Diagnosis. By W. W. Keen, M. D., of Philadelphia. III. The Study of the Infant's Body and of the Pregnant Womb by the Röntgen Rays. By Edward P. Davis, M. D., of Philadelphia. [Reprinted from the *American Journal of the Medical Sciences.*]

Typhoid Fever in Childhood; with an Analysis of Two Hundred and Eighty-four Cases. By John L. Morse, M. D.,

f Boston. [Reprinted from the *Boston Medical and Surgical ournal.*]

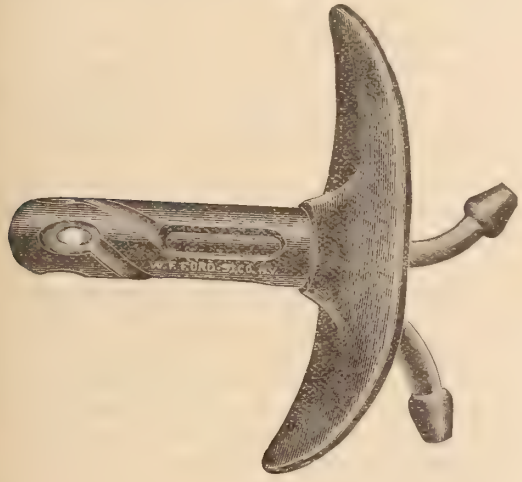
The Importance of Frequent Observations of Temperature i the Diagnosis of Chronic Tuberculosis. By Walter Chaning, M. D., of Brookline, Mass. (Read before the Boston Society for Medical Improvement, October 21, 1895.)

New Inventions, etc.

A DOUBLE-CURRENT IRRIGATOR FOR THE VAGINA.

By Robert Coleman Kemp, M. D.,
surgeon to the church infirmary and dispensary, new york.

This irrigator is of hard rubber, two inches and a quarter ong, with a diameter of half an inch. The entering current asses into a central tube, which screws into a hollow tip. The tip has four openings into the vagina, cut obliquely forward, about a quarter of an inch posterior to the apex of the instrument. This gives somewhat the effect of a spray. The return current passes out through four longitudinal openings, each an inch long, on all sides of the central tube, and is collected by a single curved tube in the outer cap. This collecting tube is fitted with an attachment for a soft-rubber tube. The instrument has shallow oblique grooves between the entering and return openings, to facilitate the return flow. The outer end of the instrument is closed by a thin hard-rubber cap, two inches and a half in transverse diameter, and meas-



uring four inches vertically. This cap screws in place and is curved to fit the parts, the greater curvature being below. It has attached to it the collecting tube, which curves downward and is perforated by the central entering tube. This last tube curves upward and has an attachment for the tube of a fountain syringe. The tube for the return current is of larger calibre than that for the entering current. To clean the instrument, unscrew the oval cap and central tube. This irrigator is made by the Ford Instrument Company. I am perfectly aware that there are a number of vaginal double-current irrigators, both of rubber and of glass. I have found, however, this instrument simple and clean, and therefore report it, trusting it may be of some use to the profession. The irrigator should be pressed firmly against the parts, in a slightly downward and backward direction. By this method the bedpan is unnecessary.

449 Park Avenue.

Miscellany.

The Hypodermic Use of Guaiacol in Acute Pulmonary Tuberculosis.—In the *British Medical Journal* for March 7th Dr. J. G. S. Coghill directs attention to the great value of guaiacol used hypodermically in the treatment of acute pulmonary tuberculosis. Both creosote and guaiacol, alone and combined with iodoform, he says, have been used hypodermically in oily and other sterilized solutions by Gimbert, Picot, and Léon Rosenbusch, the latter of whom injected every three or four days a three-per-cent. solution of guaiacol in sterilized almond oil into the parenchyma of the lung, either through the second intercostal space or the supraspinous fossa [*sic*]. Such preparations are, however, uncleanly, bulky, awkward to manipulate, and comparatively painful. They involve elaborate preparation and great expenditure of time.

It was Dr. Arnold Schetelig, of Nervi, says the author, who first showed that a vehicle was quite unnecessary by injecting pure guaiacol in the case of a patient with acute advanced pulmonary tuberculosis, who at the moment was in the gravest condition. About the same time the author had under his care a patient who was in a most critical condition with pneumonic phthisis affecting both bases. There was extreme prostration, with a nocturnal rise of temperature to 103·8°, which no treatment had been able to affect. Three hypodermic doses of fifteen, ten, and ten minims of pure guaiacol at intervals of four hours brought the temperature down to normal, with rapid amelioration of all the symptoms, followed by complete and permanent recovery.

Dr. Coghill states that his subsequent experience in a large number of cases has been very encouraging. He does not, however, for obvious reasons, advocate this therapeutic proceeding indiscriminately in every case of pulmonary tuberculosis, without reference to the stage of the disease or consideration of other remedial measures previously exploited or still thought necessary. For instance, if the range of temperature is not extreme, and the other conditions are not urgent, it is better to try the effect of guaiacol administered in the usual way by the mouth, either in capsule or dissolved in cod-liver oil. A dose of five minims three times a day even may suffice to reduce the temperature, but, on the other hand, it may be necessary to intensify the treatment by raising the dose five minims at a time until forty minims or even more has been reached.

In many cases, says the author, particularly when the disease is advanced, other drugs, however associated with general medication, fail, and then the hypodermic administration of guaiacol is indicated. He relates the histories of several cases in which the injections were persevered in for some time before any impression was produced on the temperature. It will be observed, he says, that the fall of temperature is comparatively gradual, and very rarely to subnormal. This valuable property of guaiacol, which especially distinguishes it, was first observed by Dr. Schetelig. In correspondence with the falling temperature, improvement almost invariably takes place in the other symptoms, especially pronounced in diminished cough and expectoration and increased appetite and weight. A moderate, warm perspiration, which usually follows the injection at a variable interval, very soon takes the place of the regular hectic night sweats. The author has usually continued the administration of the remedy by the mouth at the same time, not only to aid in the saturation and probable sterilization of the blood, but because pure guaiacol seems to check the decomposition of food in the *primæ viæ*, which the notoriously enfeebled digestion of phthis-

ical patients so readily permits. It is only in comparatively rare cases, he says, that guaiacol given by the mouth, even in the largest and frequently repeated doses, influences the temperature of acute pulmonary tuberculosis when of high intensity, whereas a daily inoculation of from two to five minims in a very large proportion of cases reduces it gradually and permanently.

As regards dose and mode of hypodermic administration, Dr. Coghill usually begins with the minimum dose, giving it before the diurnal rise of temperature has passed above normal. If the temperature is not reduced in a few days the dose is increased drop by drop to five or even seven minims, which rarely requires to be exceeded. If the reactive sweating is excessive it may be necessary to give two small injections daily, but this is quite exceptional; latterly, at the same time he has used guaiacol epidermically, instead of a second injection, to anticipate the evening rise of temperature, painting from ten to thirty minims over the cutaneous area corresponding to the pulmonary lesion. Some patients are extremely sensitive to this mode of using the remedy, being more affected by it than by the other methods. In this, he says, as in using Koch's tuberculin, each case must be closely observed and treated on its individual indications. In a number of cases where there was much cough, and where the strumous cachexia was pronounced, he has used hypodermically from a five- to a ten-per-cent. solution of iodoform in the guaiacol, and he has also used the same solution in capsules, but he says that he has been unable to observe any more favorable results than with the plain guaiacol. In these solutions the iodoform readily undergoes decomposition under the influence of light, and free iodine is liberated.

One important circumstance must be noted, says Dr. Coghill—namely, that in every case, sooner or later, in which guaiacol is used hypodermically it is distinctly tasted by the patient in a very few minutes after inoculation, and the taste lasts for a considerable time. This shows conclusively, he says, that the system can in this manner be readily saturated with the unaltered drug, and this is a point of some significance in relation to the mode in which it may be supposed to act on the morbid conditions present. However long guaiacol is taken by the mouth, and in whatever quantity, it very rarely thus declares its unchanged presence in the blood, and this, he thinks, may be reasonably accepted as the explanation of its different effects when used hypodermically and when otherwise administered.

Dr. Coghill believes that the observations recorded in the series of cases related by him justify the conclusion that in small doses, administered subcutaneously, guaiacol by itself frequently proves effective in reducing the temperature and relieving the objective symptoms satisfactorily and often permanently in acute pulmonary tuberculosis, although it and other antipyretics have failed when administered internally. This marked difference, he says, may be due to changes effected in the nature and in the properties of the drug during the digestive process. Whatever the reason may be, however, it has been found that guaiacol, when injected subcutaneously, acts in smaller doses much more potently on certain morbid phenomena than when otherwise administered, and all clinical evidence, says Dr. Coghill, tends to the opinion that this is probably accomplished by a double action, partly germicidal as well as antiseptic, on the infective microbes themselves as well as on their septic products. Clinically, also, he says, there is proof that the subcutaneous administration of comparatively small doses causes free guaiacol to accumulate and circulate in the blood in such quantities as to be distinctly recognized in such secretions as the saliva and the urine, the latter being its constant vehicle of elimination. That it is not so frequently thus recognized when taken by the mouth shows that it must either pass unchanged through the *primæ viæ* or become partly transformed into substance less active therapeutically. This tolerance of free guaiacol, says the author, marks its most valuable property, and is quite remarkable. He states that he has repeatedly injected through the chest wall from four to six drachms of a ten-per cent. solution of guaiacol in paraleine into both vomicæ and bronchiectases without any inconvenience to the patient. He has also used similar solutions intratracheally, but the results have not been sufficiently encouraging, he thinks, to warrant a continuance of the plan.

The Diagnostic Value of Sudden and Acute Pain as a Symptom in Abdominal Disease.—In the *Glasgow Medical Journal* for March Mr. Grant Andrew calls attention to the difficulty experienced in forming a correct estimate of the nature of the condition from such an important symptom as pain. Some sudden disorganization, he says, occurs, and Nature takes this way of making it known. An account of how the pain arises is of great importance, for it enables us to limit the condition to that group which is characterized either by its sudden or by its gradual onset. Frequently we do not see the patient until the acuteness of the pain demands relief, for the feeling of uneasiness which sometimes precedes severe pain is not considered of much importance; perhaps it is attributed to something recently taken, or to some other influence which may or may not have any bearing on its cause.

The principal affections of the abdomen, says the author, which are apt to begin suddenly are the different varieties of acute intestinal obstruction, such as internal strangulation, acute intussusception, and volvulus. The mode of onset in these three conditions is sudden; in the forms of acute obstruction due to gallstone or to stricture it is less so than in the others. In internal strangulation the pain comes on so suddenly that the patient can state the exact moment of the seizure. In acute intussusception also it comes on suddenly, and its abrupt character is influenced to some extent by the nature of the invagination; it may also come on while the patient is in perfect health. In the ileo-colic form the attack is more sudden than in the colic and rectal forms. In volvulus the attack is usually sudden, but when it is gradual there is a history of chronic constipation. In the varieties of acute obstruction due to gallstones or to stricture there are conditions which, says the author, do not, as a rule, come under the heading of the title of his paper, for the attack in these forms is gradual, particularly in the latter.

In appendicitis, says Mr. Andrew, the pain comes on very suddenly. Fowler, he says, considered the suddenness of the attack so prominent a feature of this condition that, in the diagnosis, he took into consideration only those affections in which the attack was usually sudden. In acute general or diffuse peritonitis which is secondary to perforation of the stomach or of the bowel, to rupture of an abscess, or to accumulation of different kinds, the mode of attack is sudden. When pain exists as a symptom of a primary condition it becomes suddenly greatly aggravated at the time of the rupture or of the perforation, or very soon afterward, and this fact, he says, is of great diagnostic value.

In hepatic colic the attack is usually sudden and it comes on often without warning or without any previous digestive derangement. In renal colic the mode of attack is most frequently sudden, and it depends upon whether the stone has entered or is about to enter the ureter. As intestinal colic depends upon a variety of causes, the mode of attack, says

r. Andrew, must also vary. Quain, he says, mentions four stinct varieties of intestinal colic, as follows: 1. That due to rect irritation of the bowel; that due to fermentation of digested food; that due to the decomposition of retained eces; that due to worms, etc. 2. That due to the morbid ate of the bowel itself and to enteritis. 3. That due to re- ex causes, emotional disorders, disease or irritation else- here, the uterus, dentition, or exposure. 4. That due to lood-poisoning, to lead or copper poisoning, to gout, or to heumatism. Taking these different causes as a whole, he says, he attack is usually very sudden.

With regard to the character of the pain, it varies in kind nd intensity, according to the mode of attack or to the organ ffected. In all the acute abdominal affections the pain is ery much the same in character, although the intensity va- ies. In internal strangulation it is very intense, severe, and gonizing. In acute intussusception it is severe and parox- smal, the paroxysms being a marked feature of intussuscep- ion, and due to the violent peristaltic action of the bowel. n volvulus the pain at first is moderate; it is less intense han that of internal strangulation and somewhat paroxysmal. n impacted gallstone and in stricture the intensity of the ain is slight at first, but later on it becomes paroxysmal. In ppendicitis the character of the pain varies. When it comes n suddenly, which, says, Mr. Andrew, is by far the most fre- uent mode of attack, it is very severe and often agonizing. owler, he says, states that at the beginning of an attack the ain is acute and lancinating, and that this was the character f the pain in all his cases, especially in three, in which it was ound that the appendix was situated extraperitoneally. In cute general or diffuse peritonitis secondary to perforation f the stomach or of the bowel, pain is a prominent symptom, nd it is difficult to describe it, he says, other than to say that t is usually very acute and more or less continuous, not par- oxysmal, and very intense at times.

In hepatic colic the pain is described as aching, cutting, earing, or burning; in intensity it is sometimes slight, but sually it is very severe and paroxysmal, and is accompanied, as a rule, by a feeling of tightness. In renal colic the pain resembles very much that of hepatic colic, both in kind and in intensity. In intestinal colic the pain varies; it is often severe and occasionally agonizing, and its intermittent or spasmodic character is a marked feature of this condition.

Concerning the seat of the pain, says Mr. Andrew, in endeavoring to find its cause we must first of all distinguish between that tenderness, sensitiveness, and the actual hyperæsthesia of the abdominal parietes which usually accompanies sudden and severe abdominal pain. In internal strangulation the pain is referred to the umbilical region, which is to be expected, he says, for, as a general rule, the more sudden the attack and the more acute the irritant the more likely will the pain be to be referred to the site of the plexuses; consequently, in these instances, the seat of the pain is no guide to the seat of the disease. Tenderness of the abdomen on pressure in this condition is generally absent at first, but it appears later, either limited or general, according to the extent to which the peritonæum is involved. In reference to this tenderness, says the author, it means an extension of the mischief to the peritonæum. This statement, however, he says, has its qualifications, and one in particular, that, after the bowel has been in violent peristaltic action for some time, it is liable to cramp. This condition also gives rise to tenderness on pressure, but of a different kind, that is relieved by firm pressure, whereas that due to peritoneal disturbance is aggravated. As acute intussusception, he says, is most frequently met with in children, the pain can not be localized with the same precision, but from the suddenness of the attack it may be referred to the site of the great nerve plexuses. In volvulus the site of the pain varies. Tenderness on pressure is absent at first, but it very soon makes its appearance over the region involved. This is due to the fact that the peritonæum in the distorted loop is implicated very early. Treves, says Mr. Andrew, states that there is no form of intestinal obstruction in which marked pain is elicited earlier than in volvulus, with the exception, perhaps, of certain examples of acute intussusception. In gallstone or in stricture the pain is usually referred to the seat of obstruction.

In appendicitis the seat of the pain depends on the suddenness of the attack. Tenderness on pressure is usually present from the first. It has been said that the acute pain which is present at what is taken to be the onset of the attack is an indication that the inflammatory process, which before had existed in the mucous membrane and muscular coat, although without much or any evidence of its presence, has reached the peritoneal covering. The tender or sensitive area, says the author, corresponds then to the position of the appendix, and the most exquisitely tender part, according to McBurney, on a line between the right anterior superior spine of the ilium and the umbilicus, although the absence of special tenderness at this point does not exclude the appendix as a cause, as it occasionally passes down into the pelvis and becomes fixed there, or lies on the outer side or entirely underneath the cæcum. An interesting fact, says Mr. Andrew, was recently ascertained in a case of appendicitis. When pressure was made over McBurney's point, not only was pain complained of at the seat of pressure, but also in the epigastric region, and when pressure was made over the epigastric region, pain was felt not only there, but in the region of the cæcum, and in the latter situation it passed in a direction from right to left toward the umbilicus. This Mr. Andrew attributed to a specially susceptible state of the nerve centres. Fowler, he says, refers to this point as follows: "Tenderness was frequently elicited after the first thirty-six or forty-eight hours, when adhesions had formed, by making pressure upon portions of the abdominal wall more or less remote from the site of the appendix. Tenderness was felt in the right iliac region when the cæcum was in the normal position, although pressure was made elsewhere. Its presence is believed to be due to dragging upon the adhesions about the appendix or to disturbance of the inflamed structures involved in consequence of the transmitted pressure." If this is the explanation, says Mr. Andrew, why should pain be felt over the plexus when pressure is made in the affected region? Perhaps the pressure, by disturbing the adhesions, irritates the peripheral branches of the sympathetic, and the pain is consequently referred to the centre.

In acute diffuse peritonitis secondary to perforation, etc., the pain is at first diffuse, but the umbilical region is more frequently referred to, and it is consequently no guide to the seat of rupture or of perforation. It may be, says the author, possible at a later stage for the patient to indicate the seat of the trouble, but this is not possible at the beginning. The pain is attributed to shock, and it may lead to a fatal result before a general inflammatory process has time to occur. In this condition the tenderness of the abdomen is so great at times that the slightest pressure increases the suffering.

In hepatic colic the pain is spoken of as arising at the pit of the stomach or at the umbilicus, and radiating to the back between the shoulders, or to the chest or to the shoulder-tip. This may be accounted for by the irritation of the solar and other plexuses. In renal colic the seat of the pain depends upon the situation of the calculus. Tenderness on pressure

over the affected region is usually present. The pain in intestinal colic begins and is most severe in the umbilical region; it extends to other parts and even involves the entire abdomen. In this condition, says Mr. Andrew, pressure gives decided relief.

With regard to the significance of sudden and acute pain as a symptom, he says, the mode of onset, the character, and the seat of the pain help us in the diagnosis of the various abdominal affections.

Surgical Morals.—In an article on this subject published in the *Boston Medical and Surgical Journal* for March 19th, Dr. David W. Cheever says that in the present feverish condition of operative surgery it may be prudent to ask ourselves what is the object of an operation and how we should regulate our conduct in unforeseen contingencies. The problem, he says, may be condensed into the following questions: 1. When to operate. 2. When not to operate. 3. When to stop. 4. When not to stop.

In regard to the first question, says the author, if we confine our selection of cases to those which clearly come under the cardinal rule for operation—namely, to relieve suffering, to prolong life, or both—there will be very little difficulty in the choice. We must consider whether life is imperiled and whether the suffering can probably be relieved. If we are asked to operate, he says, shall we accept only good risks, and decline the doubtful or hopeless cases?

The second question is a difficult one to decide. Operations should not be undertaken without the full consent of the patient and his family, if it is possible to obtain it, and there should be some responsible person who understands the nature of the operation to be done and what may be reasonably expected from it. No operation should be done when the patient is in a state of shock, unless hæmorrhage, apnœa, or obstruction of the bowels is present, as in hernia, for example. If there is time, says Dr. Cheever, the systemic condition of the patient should be fully considered—for example, as to the integrity of the heart, the arteries, and the kidneys. In a case of no emergency the age and the prospect of life of the patient should be taken into account. In cases of glandular infiltrations which are so extensive as to preclude perfect removal, he says, an operation should not be done, for instance, in a tuberculous organ, or in a sarcoma of the antrum where the sphenoid cells can not be extirpated. There are two important exceptions to this rule, however: 1. To relieve agonizing pain, an operation should be done on any slight chance, for, unless the suffering can be palliated, the patient had better die than live. 2. In a forlorn hope, so to speak, after the risk has been fairly stated, the patient is entitled to an operation, if he wishes it, and if he takes the responsibility; here, however, the limit must be those cases in which there are one or more chances of success.

In regard to the third question, says Dr. Cheever, must we stop when the patient fails? Not always, for the failure may be due to the anæsthetic or even to simple nausea. In this case the surgeon should stimulate the patient and consider carefully before giving up the operation. Stopping, he says, is indicated when we come to the end of all that can be taken out—for instance, in a case of malignant tumor; in an operation in the abdominal cavity, when a glance or a touch reveals that the tumor is not removable and that it has grown into vital parts; in an operation on the surface of the body, when stopping will not imperil life so much as going on; in syncope with a pulse at 108; with sighing respiration, and with a colliquative sweat.

Concerning the fourth question, says the author, When not to stop, keep on as long as the patient breathes; it is his only chance. The contingencies are: An operation which has so far displaced and broken up a soft internal tumor as to render death from bleeding or from sepsis certain if any is left; an oozing hæmorrhage; a difficult tracheotomy; a crushed skull with a pulse of 40 and Cheyne-Stokes respiration. Having trephined, he says, we can not stop until compression is removed and the bleeding checked. Extravasation of urine, and a bladder to be drained; if the patient dies in the process, we must drain the bladder. If we do not do all these things, the patient dies; his only chance lies in their being done.

Surrounded with these terrible chances, says Dr. Cheever, the surgeon, like the executioner, raises or depresses his thumb, and the patient lives or dies. Surely, he says, there is no responsibility like this. All this should teach us, first, to be over-careful about getting in so deep that we can not withdraw, or about meddling with what had better be left alone. Second, not to imperil life to cover our mistakes, for we all make them. Third, in self-defense, to withdraw from an operation, or from a case, at once, if our advice is not followed. To bear the responsibility, we must be absolute masters.

The Use of Tannigen in the Diarrhœal Diseases of Children.—In the *Therapeutische Wochenschrift* for March 9th, Professor Escherich, of Gratz, gives his views on the action of this new remedy, a two-molecule acetyl substitution compound of tannic acid having the formula $C_{14}H_8(CH_3CO)_2O_9$. Tannigen is a yellowish-gray powder, odorless and tasteless, practically insoluble in water and in diluted acids, but soluble in alkaline solutions and in dilute solutions of phosphates and carbonates, as well as in alcohol. In consequence of the richness of milk in the salts mentioned, tannigen dissolves in it to some extent, but most of the powder falls to the bottom undissolved. When tannigen comes in contact with alkaline secretions, the tannic acid is freed from the acetyl and exerts its astringent action, and its usefulness in diarrhœa is due to this fact. In children that are nursed at the breast the intestinal contents are alkaline, so that in them this action of tannigen has full play; but the case is different with those that are fed artificially—in spite of the alkalinity of the digestive juices, the products of fermentation render the intestinal contents acid. It would be an error, however, to suppose that even under such circumstances the reaction was acid in all parts of the lumen of the intestine, and to infer that tannigen could not meet with the alkalinity necessary to render it operative by setting free its tannin, for at the periphery, close to the mucous membrane, the digestive juices are sufficiently uncontaminated by the general acidity of the intestinal contents to act upon the drug in the way desired and, happily, at the very place, on the diseased surface, where its tannin should exert its astringent action. Here a little of the tannigen is decomposed and rendered efficient, although the greater part of it, of course, passes through the intestines in an inert state and is discharged with the fæces. Moreover, when the intestinal secretion is augmented in consequence of irritation, or when an inflammatory transudation takes place into the lumen of the intestine, alkalinity of the intestinal contents supervenes, and all the more speedily if the amount of food taken is diminished and if sugar is prohibited.

The action of tannigen varies widely, according to the locality and the kind of diseased action that is going on. Escherich holds that the drug is positively contraindicated in pronounced inflammatory diseases of the intestine accom-

anied by effusion of serum into it. In cases also of the se retion of a thin, serous fluid, such as results from acute irri ation of the upper part of the intestinal canal, it is of little se. It is particularly the lower portion of the intestinal ube that reacts well to tannigen; the amount of mucus is iminished at once, and its overproduction does not recur nless the use of the remedy is discontinued. As a conse uence, not only are the irritated state of the mucous mem rane and the particular cause of the disease overcome, but he loss of nitrogenous material and the heightened peristal is are reduced and the absorption of water and nutrient natter in the large intestine is promoted.

But this is not all that tannigen accomplishes. In spite of he paucity of experimental evidence, it can hardly be denied hat tannin has a certain disinfecting power by impeding bac erial development; as with alkaloids, so with numerous bac erial poisons, such as toxalbumines, it unites to form insolu ble and consequently non-poisonous compounds, as is shown n Cantani's treatment of cholera. All these valuable attri utes unite to accomplish the gratifying effects of the use of annigen in subacute and chronic intestinal catarrh in chil lren.

The characteristic feature of catarrhal evacuations, says Escherich, is the increased amount of mucus, while watery stools containing undigested remnants of food indicate dys pepsia. If the mucus comes from the upper part of the in testinal canal, it will have the form of glassy, sagolike grains mixed intimately with the remains of food; if, on the other hand, the lower portion of the intestines is the seat of the catarrh, the mucus will appear as a colorless or yellowish-green layer smeared over the fæces, sometimes suggesting the idea of paste. The kind of stools last described may alter nate with discharges of pure mucus, like frog-spawn, and sometimes with masses of mingled blood and pus. Mixed forms are commoner than these typical ones. Escherich de clares that in these cases he has observed better results from the use of tannigen than from that of all other remedies, but he associates dietetic treatment with it and continues both for some time after the diarrhœa has ceased. Large doses must be given—three grains for children less than a year and a half old, and seven grains for older children, from four to six times a day. For the most part, Escherich gives the pow der mixed with the child's food. He has never known tanni gen to derange the appetite or the digestion or to produce any untoward after-effect. It is not uncommon, however, for it to color the stools black.

In acute intestinal catarrh and in the early stage of follic ular enteritis tannigen is much less efficient, but after the acute irritative symptoms have subsided it sometimes causes a surprisingly rapid improvement. Simple dyspepsia and dis orders affecting only the stomach are unsuitable for the use of the remedy. Escherich's experience with it in cholera in fantum has not been large enough to lead him to draw any conclusions as to its usefulness in that disease; but in the diarrhœa of measles and in that of tuberculous disease of the intestines its action is favorable, even if only temporary. He suggests that it may be found useful in intestinal hæmor rhages and to correct putrefaction of the contents of the in testines.

Indian Systems of Medicine.—In the December number of the *Indian Medico-chirurgical Review* Lieutenant-Colonel T. H. Hendley, of Jeypore, gives a short account of the Indian schools of medicine and of the treatment of the sick in past times, as well as at the present day. It is well, he says, to consider why these systems have decayed and yet still have such a hold on the faith of the inhabitants of that vast em pire. What, he asks, should be done to promote the knowl edge of and belief in that which we hold to be a more rational, because a more scientific, mode of practice? He thinks that so long as dissection was practised, the Brahmanical Hindu surgeons and physicians were quite as advanced in the knowl edge of their art as their brethren in other parts of the world. They were good observers and careful recorders of natural phenomena, but as soon as they allowed the religion of the Puranic period to interfere with them, by its dictum that dead bodies were not to be examined, they lost the only means of testing their observations of true advancement. To the same defect was due the want of progress of the hakims, who, when they adopted the works of Hippocrates and Galen, had a good foundation upon which much might have been built up. The onward march of medicine in Europe was prevented by the same unfortunate prejudice.

Next in importance, says Colonel Hendley, comes the too great reliance on religious interference, for the idea has been generally prevalent that disease is a demon which must be exorcised, propitiated, or expelled by charms and sacrifices or by cabalistic practices and by the deprivation of nutriment and the starvation of its victim. The wonderful and elaborate working of the ordinary Indian mind, which makes so much of details, also finds expression in medicine in the preparation of most complicated prescriptions, such, for example, as *churnams*, or powders which contain ten or twenty ingredi ents; or it sees a fancied connection between the shapes of certain vegetable drugs and diseases. Complicated formulæ of this kind, of course, prevent the results of remedies from being studied with any degree of accuracy, and here again, he says, we have only an evil which existed in Europe at one time and had the same results.

So poorly is the Indian physician paid by the great ma jority of his patients, says the author, in comparison with the sums lavished on feeding Brahmans and beggars or on expen sive drugs recommended by worldly-wise priests and the less conscientious members of his own profession, that it is not wonderful that men of the best powers now rarely practise medicine. There is a convenient but pretty general idea that the good hakim or baid should be satisfied with a pittance from the State, and for the rest be content with the con sciousness that his art is a charitable one which will be re warded in another world if he is not sufficiently paid by the thanks and blessings which attend him here. It has thus come about that much learning is not looked for in the baid or hakim, though the former is burdened with the necessity of reading all his books in Sanskrit, and, as regards the latter, he says, one may well believe the truth of the story that all the qualifications that were required in the son of a late hakim who lived in a great city were that he should carry his father's staff and promise to read his books. So much for the decay of the indigenous systems, says Colonel Hendley, and yet, decayed as they are, and, notwithstanding that edu cated Indians are fully aware of the immense help which is derived from such modern scientific instruments as the micro scope, the stethoscope, and the clinical thermometer, they still undoubtedly have much influence in the country.

The author thinks that is due to the prevailing idea that the European constitution is so radically different from the Indian that what cures disease in the former is, in the latter, either deleterious or ineffective; to a belief in the systems of philosophy which accord with the Indian systems of medi cine, so that the patient understands the lines of argument and practice of his fellow-countrymen and coreligionists, whereas the views of the European are a mystery to him; to

the fact that the baid and the hakim use drugs and recommend articles of diet which are well known to the patient and, therefore, in his opinion, devoid of anything which will defile him; to the consideration which is naturally shown for all his many prejudices and beliefs; to the feeling that, after all, he can have something to say in his own treatment and adopt that which commends itself to his judgment as being most likely to succeed; to the patience with which the lengthy story of his ills is heard; and lastly, he believes, to the fact that the patient generally has to do some great thing in the way of abstention from luxuries or pleasures, and to take nauseous drugs which give him the sense of getting something for his money. With regard to religious belief and prejudice, the author states that he consulted a friend, Rao Bahadur Thakur Govind Singh, the premier noble of Jeypore, whose views are interesting and instructive. He states that the Dharma Shastras lay down that men are subject to different diseases on account of different sins committed in previous births. If the sin is trivial the disease (Karma-Roga) can be removed by the exercise of charity. They are also afflicted by changes in the three humors which are due to irregularities of diet or to exposure to heat or cold. Such diseases (Dosh) may be cured by the help of medicines. A third class of disorder arises from both causes combined, and may be removed by the practice of charity and the use of drugs.

When a baid is called to see a patient, the first duty is to find out the cause of his disorder, and if he ascertains that it arises from any of the irregularities which have been described he begins his treatment. Should it fail, he at once advises the use of charity, as it is evident that the disease arises from past acts of sin; should a favorable result not follow, it at once becomes clear that the man's past sins have been too great to admit of present relief. These ideas are naturally much in the baid's favor, as it is difficult for him to become discredited while the priests and the poor are on his side. Babu Kali Pada Banerji, the principal of the Sanskrit College at Jeypore, says Colonel Hendley, also gave him an account of the education and position of Hindu physicians, in which he states that medicine is nowhere taught in India in the vernacular, hence much time is spent in the study of Sanskrit, with which language few baids at the present day become really familiar. Books only are used, and there is no general practical education; the pupils pick up what knowledge they can of the symptoms and signs of diseases by seeing patients with their masters, from whom they also become familiar with the use of drugs. The teachers say that a knowledge of anatomy is not required in medical cases, as it is only necessary to be acquainted with the symptoms of the different diseases as laid down in books. The principal of the college, Mr. Vacha, also adds that the study of medicine is entirely hereditary, and that the tuition is confined to the instruction of a son or a pupil by his father or by his master, who never teaches all that he himself knows, but always reserves one or more great secrets for his own advantage. The foregoing remarks, says the author, give us some indication of what is needful to popularize our own system.

In the first place, he says, he thinks we should try to lessen the prevailing ignorance of anatomy and physiology by giving popular lectures or demonstrations which should be illustrated by the magic lantern or by pictures, by exhibiting anatomical models in our museums, and by encouraging the publication in the vernacular of very simple works on the subjects indicated and on hygiene. These works should generally be pamphlets with rough drawings or colored pictures, which the people understand better than elaborate English prints. We should take every opportunity, he says, not only in lectures and books, but in practice and conversation, to explain why a certain course of treatment is followed, and to assure the people that our drugs do not contain anything which is prejudicial to the religion or to the caste of any class of Indians. It is easy to show that the best Hindus and Mussulmans find nothing in the European systems which is repugnant to their respective creeds, and that success in the practice of them does not depend upon the use of wet or dry medicines, or the solution of drugs in alcohol, or on forcing a man to adopt unaccustomed kinds of diet. At the present moment most Jains reject medicines unless they are given as dry powders, and many Hindus and Mohammedans fear that alcohol may be administered to them in some form or other. We should therefore be careful to have no secret remedies. It would astonish many Indians if it were demonstrated to them that many of the crude compositions of their pharmacopœias are given in a far purer, and therefore more exact and reliable, form by Europeans. In short, it may be truly said that our system has everything to gain by publicity and discussion, whereas the indigenous ones assuredly lose when light is thrown upon them and the atmosphere of mystery which surrounds them is dispersed.

We must respect prejudices when they are not harmful, says Colonel Hendley, and be prepared to give reasons for our practice, exercise more patience, and spend more time on individual cases; we must study the diet of the Indian, in health as well as in sickness, and we must be careful not to prescribe the so-called patent medicines or to make too much of routine formulæ, but show that we understand the action and combination of drugs, as all Indians have great faith in medicines and can not understand the physician who makes light of them. Success in practice depends, he says, upon keenness of observation, upon letting nothing, however trivial, escape notice, and we may learn much in this respect from the old-fashioned conscientious baid, who is usually acquainted with the action of a great number of simple vegetable drugs, and is very minute in his investigations, although generally mistaken as to his interpretation of certain phenomena, such, for example, as the pulse. The Amrit Sagar says the good physician should be able to finger the pulse as a skilled performer plays upon the vina or upon the harp.

Colonel Hendley thinks that great efforts should be made to put down quackery of all kinds, especially of European origin. No quack or patent medicine should be allowed to be sold or advertised unless its composition is made known and printed on the label of every box or bottle in which it is sold. It should be easy to apply this law to European products, and then it would not be difficult to deal with the so-called Vaidic and Indian articles. Both should be heavily taxed. A medical act should be passed, he says, by which only qualified persons should be allowed to practise European medicine, so that the art may, at all events, be presented in its true colors. He believes there would be a strong feeling among the Indians that no one should be allowed to practise as a baid or as a hakim who had not passed a fair test, which in time would gradually be made more difficult.

The whole question, he says, resolves itself into a patient struggle between ignorance, prejudice, custom, and superstition on the one hand, and knowledge, enlightenment, and science on the other. The outlook is not discouraging, as the increasing attendance at the hospitals and dispensaries everywhere shows. More advance in public estimation has, of course, been made in surgery, because results are so evident, but medicine has had its triumphs, and more especially the preventive branch of it. Colonel Hendley concludes with the warning that we should be content to proceed slowly if

e wish for ultimate success, bearing in mind that the habits nd beliefs of ages can not be changed in a day or even in a entury.

Trional in Epilepsy.—In the March number of the *University Medical Magazine* Dr. H. P. Boyer reports his observaons in regard to the clinical use of this drug by Dr. S. Weir Mitchell, as the results obtained from this treatment were uch, he says, that it was thought advisable to publish them. n most instances where trional was used the patients were n some way benefited. Either the number of attacks was iminished, their severity lessened, or the general physical ondition of the patient improved. Early in 1894, says Dr. Boyer, Dr. Mitchell, pleased with the results of this treatment n his private practice, began to use it in his out-patient serice. The results of its use and the drawbacks are stated in n account of thirteen cases. Others, says Dr. Boyer, might e added to the list, but the patients neglected to report at the ospital, and the results could not be carefully watched. Others, again, suffered so much from drowsiness and vertigo, nd derived so little benefit in regard to the diminution of he number of attacks, that the treatment was not kept up or more than two or three weeks. Of the thirteen cases referred to, in ten there was a marked decrease in the number f attacks during the treatment, and the physical symptoms lso were singularly improved. In five of the cases the number of attacks was less under the trional treatment than under the bromide treatment; in two others, however, the bromides gave more satisfactory results. Dr. Mitchell believes, says Dr. Boyer, that trional may often prove an efficient substitute for the bromides, and he states that he has seen no ill effects follow its continuous use for many weeks. It is well, he says, at times to give the bromides in the daytime and trional at night.

Hereditary Appendicitis.—At a recent meeting of the *Société médicale des hôpitaux*, a report of which is published in the *Gazette hebdomadaire de médecine et de chirurgie* for March 5th, M. Faisans remarked that it was evident that certain families presented a veritable predisposition to appendicitis, which was admirably explained, since, as M. Dieulafoy had shown, it was a question, in these cases, of a veritable appendicular lithiasis depending upon constitutional and hereditary gout. In the majority of the cases which had come under M. Faisans's observations the appendicitis had presented itself under the relapsing form and had terminated in perforation, with fatal septic peritonitis. He concluded from this that ablation of the appendix was indicated in all cases, even in the most benign, as a preventive measure.

M. Talamon reported the case of a little boy who had had five attacks of pain in the right iliac fossa during a period of three months. Four years before, a little brother had died from perforating appendicitis, and the mother had consulted him on the advisability of a preventive operation. When M. Talamon had seen the patient during the last attack he had ascertained by deep pressure the presence of a painful spot a little above the Falloppian arch at the lower external part of the right iliac fossa. The abdomen had been slightly distended, but there had been no puffiness or appreciable tumefaction near the appendix. There had been no fever, but the tongue had been somewhat coated. Three days later pressure had revealed the presence of more pain in the right iliac fossa. The diagnosis had appeared certain, said M. Talamon, and an operation had been decided upon. After three weeks of absolute rest in bed the operation had been performed by M. Jalaguier, who had found the appendix to be of abnormal length and of the size of a large crow-quill; it had not been dilated and had not seemed to be inflamed on the outside. Filamentous adhesions had united it at its upper third to the cæcum. On palpation, a small hard body, which moved under the finger, could be felt about two centimetres from its lower extremity. The lumen of the canal had been free, and the mucous membrane had been covered with a small quantity of a yellowish-brown liquid. The foreign body, which had been arrested toward the lower end of the appendix, was a small oval-shaped mass somewhat like a grape seed in size and in appearance. The results of the operation had been perfect, said M. Talamon; there had been some vomiting for about ten days, which had been due to the chloroform, but at no time had the temperature exceeded 99·1° F. M. Talamon thought that the following conclusions might be drawn from the foregoing case: 1. That in certain cases relapsing appendicitis might be due to the displacement of a scybalum in the appendix. 2. That, in view of the hereditary appendicular history, the least pain felt in the right iliac fossa should be considered important, and if the pains recurred at short intervals, the involvement or the formation of a scybalum in the appendix should be feared, even if palpation did not distinctly reveal the presence of a local tumefaction. 3. That the only means of preventing the graver symptoms, which probably would not fail to manifest themselves, was ablation of the appendix. M. Talamon stated that in three hundred cases of appendicitis an hereditary influence had been ascertained in forty per cent., and this, he thought, showed that heredity played an important part in the ætiology of this disease.

Rules for Midwives.—The following rules, which are in force in the Clifton Dispensary, Bristol, England, have been sent for publication by Mr. L. M. Griffiths, who thinks they may be of use in like institutions elsewhere:

1. Every midwife must possess a bag which she must take with her whenever she is called to a woman in labor.

2. The bag must contain, besides other necessaries, the following:

A box of antiseptic powders each consisting of ten grains of corrosive sublimate and a grain of cochineal. The box will be labeled The Antiseptic Powders—Poison.

A bottle of glycerin, with every two ounces of which a grain of corrosive sublimate has been mixed. The bottle will be labeled The Antiseptic Lubricant—Poison.

A nailbrush and a piece of soap.

A packet of sanitary wood wool.

A box of twenty-grain iodoform pessaries.

A copy of these rules.

A book of forms for reporting cases to the resident medical officer.

3. The midwife, while she is in attendance on a patient, must wear a clean light-colored cotton dress and a clean white apron.

4. The midwife's nails must be kept short.

5. Before making a vaginal examination the midwife must prepare an antiseptic solution in the following way: One of the antiseptic powders is to be placed in a clean basin and a pint of hot water is to be poured upon it and stirred with the finger until the powder is completely dissolved. The solution will be of the strength of one part in 1,000.

6. Before making an examination or touching the external parts the midwife must wash her hands and wrists with soap and hot water, cleaning her nails with the nailbrush. She must next rinse them free from soap. Then she must hold her hands for a full minute in the antiseptic solution which has been prepared. The hands must not be wiped before

making the examination, but the fingers must be anointed with the antiseptic lubricant. No substitute, such as lard or vaseline, is to be used at any time for anointing the fingers.

7. Having made the examination, she should again wash her hands in soap and water.

8. After labor the external parts are to be washed with clean wool which has been soaked in the antiseptic solution.

9. After a case of tedious labor an iodoform pessary is to be inserted in the vagina. A similar pessary is to be used night and morning for the first three days, and once in twenty-four hours for the next six days.

10. The services of the resident medical officer shall be obtained if the presentation is obscure or unnatural; if the labor is unduly prolonged; if the discharge is excessive or becomes offensive; or if the woman does not appear to be progressing favorably.

11. The midwife must wipe the child's eyelids with a clean napkin as soon as the head is born. This should be done if possible before the eyes have been opened. When washing the child the midwife is to separate the lids and squeeze over the eyes a piece of wool that has been soaked in the antiseptic solution.

12. Ergot is in no case to be given before the birth of the child.

13. Within twelve hours after any confinement the midwife must report the case to the resident medical officer on the form provided for the purpose.

14. The midwife shall visit the patient daily for the first three days after a confinement, not reckoning the day of confinement as one.

15. If the midwife has been brought into contact with a case of puerperal fever or any other illness supposed to be infectious, she must immediately report the fact to the resident medical officer, and she is not to proceed to any case of labor or visit any of her patients until she has received his permission to do so. Neglect of this rule will mean instant dismissal.

The American Academy of Medicine.—The twenty-first annual meeting will be held in Atlanta, Ga., on Saturday, May 2d, and Monday, May 4th, under the presidency of Dr. Henry M. Hurd, of Baltimore. The preliminary programme includes the following papers: The President's Address—Laboratories and Hospital Work, by Dr. Henry M. Hurd, of Baltimore; Colonies for Epileptics, by Dr. Frederick Peterson, of New York; Insanity in the South, by Dr. J. T. Searcy, of Tuscaloosa, Ala.; Tuberculosis in Public Institutions, by Dr. J. W. Babcock, of Columbia, S. C.; Vivisection, by Dr. George M. Gould, of Philadelphia; The Confusion of Pharmacy relating to the Theory and Practice of Medicine, by Dr. Elmer Lee, of Chicago; A National Board of License for the Practice of Medicine, by Dr. Henry Leffmann, of Philadelphia; A Report of the Committee to Abstract the Laws regulating the Practice of Medicine and to Suggest a Model Law, by Dr. Perry H. Millard, of St. Paul, Minn.; Homicide, by Dr. Paul Bartholow, of Philadelphia; The Sociological and Scientific Attitude of the Medical Profession, by Dr. W. J. Kline, of Greensburg, Pa.; and A Study of Some of the Distinguishing Features of the Homo Medicus, by Dr. Charles McIntire, of Easton, Pa. The subject of the methods of medical teaching will be presented for discussion in the following papers: The Preparatory Mental Discipline for the Medical Student, by Dr. F. H. Gerrish, of Portland, Me.; The Lecture and its Uses, by Dr. Charles Penrose, of Philadelphia; Textbook Recitation and its Advantages, by Dr. De Lancey Rochester, of Buffalo; Laboratory Methods, by Dr. V. C. Vaughan, of Ann Arbor, Mich.; Clinical Teaching for Graduates in the Diseases of Children, by Dr. J. Madison Taylor, of Philadelphia; The Seminary Method, by Dr. Bayard Holmes, of Chicago; Examinations, by Dr. E. L. Holmes, of Chicago; Students' Medical Societies, by Dr. Roswell Park, of Buffalo; State Examination, by Dr. J. McPherson Scott, of Hagerstown, Md.; The Best Method of Teaching Anatomy, by Dr. John B. Roberts, of Philadelphia; The Best Method of Teaching Physiology, by Dr. Charles D. Smith, of Portland, Me.; The Best Method of Teaching Practice, by Dr. J. C. Wilson, of Philadelphia; The Best Method of Teaching Surgery, by Dr. J. S. Wight, of Brooklyn; The Best Method of Teaching Obstetrics, by Dr. J. C. Edgar, of New York; and The Best Method of Teaching State Medicine, by Dr. George H. Rohé, of Baltimore.

Ipecacuanha in the Treatment of Bee Stings.—The *Indian Medical Gazette* for February says that Dr. George King, of the Calcutta Botanical Gardens, was recently attacked by a swarm of bees and was severely stung on the hands, the head, the face, and the neck, and no fewer than a hundred and fifty stings were taken from his neck. Fortunately, Dr. King had some ipecacuanha powder with him, which he immediately had made into a paste and smeared over the head, the face, and the neck. The effect of the paste was most marked, as it prevented, to a great extent, the swelling and pain which ordinarily follow the bee's sting.

The American Climatological Association.—The thirteenth annual meeting will be held in Lakewood, N. J., on May 12th and 13th. The preliminary programme includes the following papers: The Difficulties attending Climatotherapy, by Dr. James B. Walker, of Philadelphia; Laryngeal Vertigo, by Dr. F. I. Knight, of Boston; Sensible Temperatures, by Dr. W. F. R. Phillips, of Washington; Clinical Reports of Serious Heart Lesions without Well-marked Continuous Physical Signs, by Dr. H. L. Elsner, of Syracuse; Mitral Disease, by Dr. R. G. Curtin, of Philadelphia; Febrile Endocarditis in the Aged, by Dr. W. M. Gibson, of Utica, N. Y.; The Climate of Arizona, by Dr. Mark A. Rodgers, of Allegheny, Pa.; The Influence of Climate on Genito-urinary Tuberculosis, by Dr. J. C. Munro, of Boston; The Treatment of Cervical Adenitis, by Dr. E. Fletcher Ingals, of Chicago; Remarks on the Climate of Mount Pocono, Pennsylvania, by Dr. L. D. Judd, of Philadelphia; and The Present Treatment of Hæmoptysis, by Dr. Charles E. Quimby, of New York. Other papers will be read by Dr. Otis, of Boston, and Dr. Judson Daland and Dr. W. D. Robinson, of Philadelphia.

The Treatment of Certain Obstinate Headaches.—The *Lancet's* Paris correspondent says in that journal for March 7th that M. Galliard calls attention to a form of headache which is distinguished from migraine and syphilitic cephalalgia by its continuity, the absence of nausea and vertigo, and its cessation at night. It is generally limited to the forehead, rarely to the vertex, to the occiput, or to the temples. It generally survives any coincident disorder of the *primæ viæ* that may exist, and is distinct from the persistent headache of neurasthenia, which, however, it resembles in its resistance to ordinary remedies. M. Galliard professes to have successfully treated a certain number of these cases by giving early in the morning before breakfast a grain and a half of calomel for six consecutive days. On the third or fourth day diarrhœa sets in with some colicky pains. The gums are carefully watched. The headache generally disappears, but, should it persist, a similar six days' course is given after the lapse of a few weeks.

Lectures and Addresses.

CHRONIC RHEUMATIC ARTHRITIS.

A CLINICAL LECTURE
DELIVERED AT THE MEDICAL DEPARTMENT OF
THE UNIVERSITY OF DENVER.

By E. R. AXTELL, M. D.,

DENVER, COL.,
CLINICAL LECTURER AND PROFESSOR OF DISEASES OF CHILDREN IN THE UNIVERSITY OF DENVER, MEDICAL DEPARTMENT; PATHOLOGIST TO THE ARAPAHOE COUNTY AND SAINT LUKE'S HOSPITALS.

Gentlemen: I present for your consideration to-day a patient with the following history:

James B., fifty-two years of age, an Irishman, a horse trainer by occupation, and a married man, has been in Colorado since 1878. He comes to us complaining of pain and stiffness of the left hip and knee. His family history is as follows: His father is dead, but the cause of his death is unknown; his mother died at the age of eighty-five, of old age. He has one brother and two sisters alive and well. One brother died of pneumonia. In the family there is no consumption, no nervous disease, no rheumatism, and no gout.

Patient's History.—He had most of the diseases of childhood, from which he recovered perfectly; as a boy he was well, strong, and active; as an adult he has enjoyed good health; he has drank some, but has never been a hard drinker nor a steady one; he has been exposed to syphilis, but has never had it; he denies a sore, an eruption, or a falling out of the hair. At twenty-five years of age he had a stone removed from the anterior urethra. He was then strong and well up to forty years of age, when he was "leaded," which was followed by wrist drop, which lasted for eleven months. He recovered from this perfectly and then had an attack of pneumonia, from which he also recovered nicely. He was then well up to three years ago, when his present trouble commenced. It began very insidiously, and the first thing which the patient noticed was an intermittent sharp pain in and about the left hip joint, especially on exertion. After the pain had been noticed in the left hip for a few months it also began to be noticed in the left knee and then in the left ankle. He continued at his work, however, until August, 1893, when the pain became so severe that he had to quit. From August 10, 1893, to October 10, 1893, the patient was in the County Hospital, where he was kept in bed, but without improvement. During the past three months the patient has noticed, especially after exertion, some pain in the right hip joint, and occasionally some pain in the small of the back.

Status Præsens.—At present the patient complains of pain and stiffness in both legs when walking, or on movement of any kind. He experiences much stiffness in both legs when he first rises in the morning, and because of this he has much difficulty in getting on his clothes. The trouble is far worse in the left leg than in the right. After he gets "limbered up" he walks fairly well until he begins to have severe pain in the left hip and the left knee; then he has to quit. On account of this pain he has not been able to work since August, 1894. The pain is sharp, and is localized over the anterior and outer surface of the left hip joint and over the anterior and outer surface of the left knee joint. He has this pain only on motion. On lying or sitting down he is free from pain. This pain which he has on motion is worse during wet weather, and he says he is able to tell when a storm is due by an increase in his pains at that time. For some months he has hardly been able to remove his shoes. Lately he has noticed some slight and occasional numbness in the left leg, but this has never been pronounced. He has not noticed any twitching of the muscles of either leg. The patient states that he never has any pain during the night except when he stirs, and that the pain never wakes him up. His general physical state is excellent; he sleeps well, has no cough, no urinary or digestive trouble. His present weight is a hundred and fifty pounds, which is normal for him. He can assign no cause for his present trouble. Though his life has always been an active outdoor one, he has never worked in water, and his bedchamber has always been dry.

A careful examination of this patient to-day gives us the following facts: No ataxia of leg, arm, or chest muscles exists. The gait is awkward; the left leg moves but little at hip and knee, while the patient seems to be afraid of using his left leg with any freedom. His right leg is thrown forward very well, as you can see; in fact, almost normally. The abductors and adductors of the left femur move it but slightly, while the extensors and the flexors at the left hip are feeble, though they are not paralyzed; indeed, the muscular power of both legs and feet is good.

The patient can not override the legs at the knee, because of pain and stiffness in both hip joints, on the outside of the knee joints, and in the ankles. He can stand on either leg, but while standing on the left leg he has a great deal of trembling in it and totters seriously. By tapping his quadriceps extensor tendon we find that his patellar reflexes are normal. He presents no ankle-clonus. Plantar reflexes are present, but are slight. The cremasteric reflex is absent on the right side, but present to a slight extent on the left. The lower abdominal reflex is present on the right side, but slight, and at times absent, on the left. Upper abdominal reflexes present on both sides. The deep reflexes of the arms are normal. Muscular power of arms and hands normal. The left hip and the left knee are slightly sore to deep pressure. There is no pain to deep pressure over either sciatic nerve, or of nerves of legs or feet. There is no pain to deep pressure over the spines of the vertebræ. There is no pain when the two crests of the ilia are forcibly compressed. The patient can lean over without pain to a point where the tips of the fingers are only six inches from the floor. Both hips and knees can be moved by the patient anteriorly and posteriorly, and also passively, without pain, but on attempting to abduct and adduct the leg at the left hip, either by his own effort or by my passive motion, pain is produced. The patient has never experienced crepitation in any joint, and continued passive motion yields normal results. The articular surfaces seem to be smooth. While we are still concerned with his muscular and articular symptoms, let us take some measurements of his lower extremities. The record is as follows: At the level of the lower edge of the pubic arch, right, twenty-one inches and a half; left, eighteen inches—a difference of three inches and a half; at the middle of the thigh, right, seventeen inches and a half; left, sixteen inches and five eighths; above the knee joint, right, fourteen inches; left, thirteen inches and five eighths; over the calf, right, thirteen inches; left, twelve inches.

While making these measurements we notice that the muscles are of fair consistence, that there is no twitching or tremor.

Directing our attention now to the sensory phenomena, we find that tactile, localization, temperature, pain, posture, joint, and muscular senses are normal in the legs, the feet, the arms, the hands, and the body.

Having thus carefully reviewed the greater part of the nervous system of this patient, let us examine his special senses. We see that the pupils respond to light and accommodation and that all fields are normal. Vision in right eye I have ascertained to be $\frac{20}{40}$; in left, $\frac{20}{30}$. He wears glasses which fairly correct his vision.

The fundi of both eyes are normal. Hearing, right ear, half; left, half. Tuning fork heard equally in both ears. Smell and taste normal and equal.

I have also examined his heart and lungs and find them normal. A careful examination of the pelvis shows nothing abnormal. The examination of the urine gave the following result: Urine of a light amber color; specific gravity, 1·022; reaction acid; no albumin, no sugar. Twelve grains of urea were present in each ounce. There were no special microscopical features. Garrod's test for uric acid in the serum of a blister proved negative.

Having now our examination and the history of his trouble, let us review the special points in his case. He comes to us complaining of pain and stiffness in both hip joints, especially in the left, in the left knee, and occasionally in the left ankle. He says he is in excellent health except for this trouble, which is so serious that he is unable to work, or, in fact, do anything except "lie around." His walking is painful, and he feels as a prisoner bound in galling chains. Let us carefully seek to find what is the trouble that afflicts this man and then see what we can do for him.

Have we here a functional or an organic disease? Is this man simulating? We never know the entire motive which actuates a man, and this question must be raised. In this case, however, we can positively exclude functional disease. The muscular atrophy which this man presents can not be simulated. Then the puffiness about the joints which I have occasionally seen during a subacute exacerbation can not be functional. Again, I have seen this man when he did not see me or others, and he has always presented his peculiar gait.

We can positively say we have here an organic trouble. Is it now a disease of the spinal cord or its membranes, is it a disease of the nerves of the joint, is it trouble in the muscles and tendons about the joint, or is it a disease of the joints themselves?

If we had here a myelitis or a systemic disease of the cord, we should have paralysis, sensory disturbance, bladder and bowel symptoms, loss of iritic reflex, with lightning pains and gastric crises. None of these symptoms have ever appeared. The length of time which it required for this muscular atrophy to develop precludes the idea of its being an acute poliomyelitis. The case when first seen by me was thought to be probably a case of simple idiopathic muscular atrophy, but on testing the muscle reaction to galvanism and faradaism I found it normal. In idiopathic muscular atrophy this reaction is always lessened and usually out of proportion to the atrophy which is present. We can say with all assurance that this man's cord is a normal one.

Are the membranes of the lumbar region normal? Pressure on the nerves as they make their exit from the spinal canal may give us pain in their peripheral distribution, and muscular atrophy may follow. But a meningitis is attended with pain in the back and there is always tenderness over the vertebral spines, with shooting pains, on pressure, down the compressed nerves, and the knee-jerk is apt to be increased or abolished. Nothing of that kind exists here. Is there, then, a tumor mass in the pelvis compressing the nerves as they make their exit from the spinal canal? The symptoms of this would be tingling in the region of distribution of the compressed nerve, disordered sensation and anæsthesia, and later symptoms of neuritis. We have none of these symptoms, and our examination *per rectum* shows that we have here no such condition.

Is it, then, a disease of the sacro-iliac articulation which causes this man to be so careful in handling himself? We have seen pathological specimens of this articulation which showed pus and all the evidences of serious trouble. But here strong and firm pressure over both wings of the ilium causes no pain, and the sacro-iliac joints on both sides are not in the least tender. Certainly we can rule out sacro-iliac disease. Having eliminated the spinal cord and its membranes, sacro-iliac disease, and tumor of the pelvis, let us see if we can rule out disease of the nerves. With a neuritis we have pain, muscular atrophy, careful gait, and tenderness of joints, and with some joint swelling at times. But with an inflammation of a nerve we always have pain on pressure over that nerve. In this case deep pressure over the great sciatic, the anterior crural, and the external cutaneous produces no discomfort. We can certainly exclude the nerves.

Is it, now, muscular rheumatism? In muscular rheumatism the pain which the patient experiences on the use of the muscle is very severe. Then there is usually a stiffness of the muscles to passive motion. The muscles usually involved by chronic muscular rheumatism are those of the back and not those which control the movements of the hips and knees. In muscular rheumatism the muscle is usually somewhat tender, and this tenderness exists throughout the muscle. We have no pain on passive motion in this case and there is no tenderness of the muscle. As soon as we leave the neighborhood of the joints, deep pressure causes no pain. I exclude muscular rheumatism.

As we have already excluded simple idiopathic muscular atrophy, we have nothing remaining but joint trouble. The acute and subacute affections can be excluded, and we can positively say that this man suffers with a chronic joint trouble. Of chronic joint troubles we have but four varieties: arthritis deformans, chronic gout, tuberculosis, and chronic rheumatic arthritis. In arthritis deformans the smaller joints are the joints usually attacked, and in them great deformity results, for the joints in this disease undergo serious disorganization, and the patient experiences crepitation, as does the physician, on movement. Although

his patient has been troubled with his affliction for three ears, he has never experienced any rubbing of the articular surfaces, and on passive motion I can feel none. I do ot understand how this can be arthritis deformans. The rge joints are affected, we have no deformity, there is no repitation, even after three years, and the joints have good assive motion.

Chronic gout can be excluded. In chronic gout we ave urate of sodium deposited in and about the joints and n the ears; we have pronounced exacerbations, which we ave not had here; and then in gout we get a history of nheritance. Yet, that I might be still better able to exlude it, I have just completed Garrod's test for uric acid in his man's blood serum. I had him blistered on the leg just etween the left hip and the left knee, and obtained three rachms of serum. With this I made what is called "Garod's uric-acid thread experiment." Into a small Syracuse vatch glass I put two drachms of this fluid, and added for ach drachm six minims of ordinary strong acetic acid, and vith a glass rod carefully mixed the two. Into the bottom f the dish I now introduced a few fibres of unwashed linen. Another dish with the remaining drachm was similarly prepared. Both were placed aside, carefully covered. The hreads were examined at the end of thirty-six hours, and gain at the end of sixty hours.

In chronic gout uric acid is invariably found by this est, except when the blister is placed directly over the seat f the chronic inflammation; it is then absent. The uric cid which is present in such cases crystallizes out, and during its crystallization it is attracted to the thread, and assumes forms not unlike those presented by sugar candy pon a string. With this test carefully made, I found no ric acid.

I do not believe we have here tuberculosis of this left hip joint. Tuberculosis of this joint is a disease of childhood. Almost invariably the patient complains of the severe pain in the knee, and the thigh is always kept flexed in old cases; abscesses are also present, and the muscles about the joint are kept stiff.

We have, then, in this case chronic rheumatic arthritis, and have arrived at this diagnosis by a process of exclusion, the only way that we are justified in making a diagnosis in any chronic case.

Let us study for a moment the morbid anatomy of this disease and then consider its prognosis and treatment. In the involved joints in this man we have more or less inflammatory lymph poured in and on the fibrous structures connected with the articulations. This inflammatory lymph may be organized and new bands of scar tissue may now remain and mat together the fibrous structures about the joint. There is in the joint no tendency to purulent degeneration or to the formation of pus. In cases of long standing the thickened and dense ligaments often coalesce with the softer tissues. The fringes of the synovial membrane become hypertrophied, the cartilages of the joint become uneven by undergoing some fatty changes, and the synovial fluid is slightly increased in amount. This causes the joint to appear enlarged, altered in shape, and much less movable than usual. The cause of this man's being able to stand passive motion of extension and flexion so nicely is that through being up and about so much he has produced in this plastic exudate certain grooves which allow of free motion in those directions. All other motions in the left hip are restricted.

What is the prognosis here? As regards the continuance of life, it is good, but as regards a complete and permanent recovery, it is unfavorable. For the encouragement of us all we can say that under proper care and treatment almost any chronic joint disease will run so gradual a course that the general condition remains at least bearable for a very long time, although there may be considerable local disturbance. With this prognosis staring us in the face, we are led on to act. Never refuse to try to do something for these unfortunates. You may help, and it is quickly heralded.

What can we do? This patient is a clinical patient. We must be practical in our suggestions for his future comfort. Certainly he should avoid all unfavorable external influence. His dwelling place should be dry and warm; even the poor have some houses that are dry and warm. The patient must dress warmly, and his diet must be abundant and nutritious.

We have two methods of medication which we may make use of in these cases: internal medication and local treatment. The two must always be combined to get the best results. Many drugs have been proposed in the treatment of chronic articular rheumatism, but out of the vast array of drugs proposed there are but two that give us results, and these must be continued for many weeks before benefit is apparent. These drugs are iodine and arsenic. They should be tried in every case with brief intermissions whenever they disagree. They frequently fail, just as all drugs do in these cases, but they are worth a trial. Iodine may be given in the form of the syrup of hydriodic acid, or, better still, combined with potassium. Moderate doses are sufficient. Arsenic, given in pill form — arsenious acid, one thirtieth to one fifteenth of a grain, two or three times—may be given with the iodine. Together they are useful drugs. Iron, quinine, and cod-liver oil are sometimes indicated. The general condition gives the indication. Many practitioners believe that our greatest aim should be to keep the digestive and secretory functions perfect. In those patients who can not afford to separate themselves from further exposure to the predisposing and exciting causes of this disease we can do but little. In fact, they only ask our services when they are suffering with an exacerbation of their symptoms. For these exacerbations salicylate of sodium and acetate of potassium are of service, although these drugs, even in very large doses, are useless in the chronic cases. The physician who hopes to cure or palliate cases of chronic articular rheumatism without local treatment is following a poor plan which must result in disappointment. This trouble is largely local; in fact, there is nothing to prove to us that it is anything but local; in itself it does not produce constitutional symptoms, it is not followed by cardiac disease, and physically the patient, as in this case, is just as well as he has ever been.

Counter-irritation is certainly of service; blisters and "firing" with the actual cautery will help all cases. Massage with passive motion reduces the swelling and keeps the joints supple and free from fibrous adhesions, and likewise prevents the newly forming connective tissue from binding the tendons about the joint. I regard massage as of the greatest importance. It not only lessens the inflammation, but it prevents the consequences of that inflammation from leading on to greater harm. It is particularly useful in all cases like this which are associated with atrophy of the muscles. As an evidence of what motion can do for a crippled joint we have but to move this patient's left leg by passive motion. At the left knee and at the left hip the joint can be moved passively in flexion and extension without difficulty, but on endeavoring to move the left hip in abduction and adduction much pain is produced and much resistance is felt This is due, as I have said, to this patient's being on his feet, by which adhesions have been prevented in an anteroposterior direction.

Let us dwell a few moments upon the application of massage in these cases. A series of light, gentle upward strokes should be first applied to all parts of the joint, both above and below. The circulation is thus quickened, the lymph flows freely, and the lymphatics about the joint take from the joint cavity any excess of serous exudate. After working for a few minutes in this manner, deep manipulation should be made. Then gentle, firm kneading, alternating with upward friction, should be kept up for fifteen or twenty minutes. This, followed by passive motion for five minutes in all directions, will soon accomplish wonders. A flannel bandage carefully applied after this procedure will assist in promoting comfort and absorption. This procedure must be repeated many times at frequent intervals in chronic cases. The Swedish movement cure, like massage, is of great benefit in chronic articular rheumatism. It should be begun early and should be methodically persevered in. Next to massage, hydrotherapeutic measures are of the greatest service. These measures can be carried out in almost any household, and hence are of more extended service than massage, which requires a skillful operator. Simple warm baths may be used, or salt baths may be improvised (five or ten pounds of salt to the bath water). Much relief is sometimes obtained by applying cold water to the joint by means of flannel cloths covered with oiled silk. Then a simple procedure, but one which gives some excellent results, is the hot sand bath. This can easily be applied at home in most cases. A large quantity of sand is heated in an oven or on a stove, and the affected joint is then packed about with this sand.

Many varieties of local applications have been devised for use in this trouble, but they are beneficial only because of the massage which accompanies their use. In practice we can not always omit their use, however, and I commonly order the linimentum camphoræ compositum of the *National Dispensatory*, to which I occasionally add opium, tincture of aconite, or tincture of hamamelis. The use of the tincture of iodine in this trouble, as well as the use of electricity, is limited. Both are of little service. The faradaic current to the atrophied muscles may do much good. I have said nothing to you about a change of climate. It is not necessary for a resident of Colorado to seek a mild, dry, equable climate. We have it here. Certainly there are but few climates like it in the world. For certain cases, however, a temporary sojourn at some of our noted hot alkaline springs is useful. The famous Hot Springs of Arkansas, those of Virginia, and our own Glenwood and Idaho Springs will occasionally cure even obstinate cases.

In this disease never use morphine or any narcotic if you can possibly avoid it. A large number of those who suffer from chronic rheumatic arthritis become opium eaters.

With these measures at our command we can in almost every case oppose the progress of this dire disease, and while in some cases we are only rewarded by temporary improvement even after long-continued and active treatment, yet we must not weary of the fight.

Original Communications.

THE ACUTE RETROPHARYNGEAL ABSCESS OF INFANCY AND CHILDHOOD.

A REVISED CLASSIFICATION AND TREATMENT BASED ON THE ÆTIOLOGY.*

By HENRY KOPLIK, M. D.,

ATTENDING PHYSICIAN TO THE GOOD SAMARITAN DISPENSARY AND ASSISTANT ATTENDING PHYSICIAN TO THE MOUNT SINAI HOSPITAL (CHILDREN'S WARD).

In approaching the study of retropharyngeal abscess, its ætiology, symptomatology, and treatment, we should sharply differentiate the various classes of cases which could be brought under this heading. It seems no little confusion has crept into the literature through lack of sharp definition of sets of cases of retropharyngeal abscess, or retrovisceral abscess, or, as it is sometimes called, retropharyngeal lymphadenitis. The present paper is founded upon an experience of seventy-seven cases, extending over a period of six years, and it may be said here that the retropharyngeal abscess takes on various phases, and it is only with a large material that we can hope to eliminate some of the confusion which now pervades the literature. In looking over the literature we find that certain authors have met with a few cases of a distinct class of retropharyngeal abscess, mostly tuberculous. They have successfully treated these, and then generalized from this limited number of uncommon cases as to the whole mass of cases. This has resulted in diverse views and treatment. We must first look at the topography and anatomy of the parts involved in the infant to understand completely the situation and occurrence, facts which will be shown to be closely connected with the treatment.

In children and infants the retropharyngeal space, so far as its length is concerned, is not so large comparatively

* Read before the Section in Pædiatrics of the New York Academy of Medicine, March 12, 1896.

as in the adult. Symington shows that, though the whole neck is relatively longer in children than in the adult, the larynx in infants is fully one vertebra higher than in the adult; the space, therefore, which concerns us most in retropharyngeal abscess is encroached upon to this extent in infants, giving rise, in the presence of retropharyngeal abscess, to symptoms of pressure on the larynx sooner than would be the case in adults under similar conditions. The retropharyngeal space is, according to the investigation of Gillette, the seat of several lymph nodes which are intimately connected with the system of lymph vessels of the tonsils, the soft tissues of the palate which are connected with the glandulæ faciales profundæ and the glandulæ cervicales profundæ. All processes, therefore, which are in play in these organs, such as simple angina, diphtheria, or the infections of scarlet fever or measles, any lesions of the mucous membranes of the mouth, or aphthæ, are apt to draw into sympathy these retropharyngeal glands (Karewski), and such is indeed the case, as has been pointed out by Bokai and others. Thus this whole space behind the pharynx and in front of the vertebral column, from the base of the skull to the level of the cricoid cartilage, becomes the *locus belli* of bacterial agents. In infants the most important structures are crowded together on all sides. The affection of the above-mentioned lymph nodes is sometimes single and confined to the extent of space of the retropharynx, as shown when the mouth is opened, and then we have the abscess appearing generally opposite the base of the tongue in the median line, or to one or the other side. There is sometimes an affection of several of the lymph nodes, and then the retropharyngeal swelling can both be felt and seen from the inside of the mouth and also be recognized by a palpable swelling on the side of the neck beneath the angle of the jaw in front of the sterno-mastoid muscle, or behind the border of this muscle. In some cases the external swelling is small as compared with the internal swelling, and in other cases the external swelling causes much external deformity and the internal palpable tumor is small. These anatomical points have an important bearing on the diagnosis, classification, and eventually the treatment of these cases.

We may thus divide the retropharyngeal abscesses into distinct sets of cases:

1. The acute retropharyngeal abscess.

(*a*) The acute retropharyngeal abscess which points wholly internally.

(*b*) The acute retropharyngeal abscess pointing internally and externally.

(*c*) The acute retropharyngeal abscess which forms chiefly an external tumor.

2. The chronic tuberculous retropharyngeal abscess.

3. The septic retropharyngeal abscess.

By the above third class I refer to those burrowing abscesses which result from an infection after or with the exanthemata (scarlatina), and which burst into and involve the mediastinal tissues or important structures in the neck, and may cause death. A few rare cases have been described by Bokai senior and others.

Henoch, whose experience extends over seventy cases of retropharyngeal abscess, says that the first cases of this disease were described in 1850 by Fleming, who had two cases. After this Henoch published some cases, in 1850 and 1851.

Bokai senior, whose writings have tended most to familiarize us with the so-called acute idiopathic abscess, has in three articles given a description of one hundred and twenty-nine cases, occurring in the Children's Hospital of Pest, and their treatment. These cases extended over a period of years as far back as 1854. Since 1875 the observations of Bokai senior have been continued by his son, who places the number of abscesses of his own experience at one hundred and thirty-eight cases. In 1880 Burkhardt infused new spirit into the discussion of the subject by a publication which occupied itself mainly with methods of treatment based upon an experience of three cases. If to these publications we add the French writings of Gautier, we shall include the main statistics upon this very interesting disease. As the disease occurs in subjects of very tender years, the symptoms have at times been fatal and always alarming. The relief by proper treatment has in the vast majority of cases been so striking and brilliant that up to the present day but very little or nothing in the shape of an attempt to find out the ætiology of these cases has been made. The articles mentioned, which make up the mass of literature on this subject, are concerned in a full discussion rather of the treatment than of the ætiology. Yet, if the ætiology is fully understood, the treatment of these cases can be more intelligently guided.

Ætiology.—The early and even the present nomenclature of acute idiopathic retropharyngeal abscess is erroneous. The writer does not hesitate to say that, from our present standpoint, such a thing as an acute idiopathic retropharyngeal abscess is an impossibility.* The anatomical investigations of Gillette have shown that there are behind the pharynx lymph nodes and a lymphatic system, as we should expect in the tissue between the pharynx and the vertebral column, and that there is an intimate relation between this system of lymph nodes and those of the tonsils at the angle of the jaw and in the deep structures of the neck; consequently, an infection of the tonsils or soft palate, the gums, or the lymph glands of the neck will draw the retropharyngeal lymph nodes into sympathy. The writer of this paper, in his article upon lacunar diphtheria of the tonsils, and also previous articles upon angina of a non-membranous or even evanescent type, demonstrated the presence of streptococci in the depths of the *tonsillar lacunæ*. An angina, ever so slight, may harbor enough to start a retropharyngeal infection. Bokai senior, though not a bacteriologist, noted clinically that many of these cases of retropharyngeal abscess were preceded by an angina. The term idiopathic should be discarded. The various forms of stomatitis, the anginas complicating the exanthemata, the

* In the last edition of Henoch's work (1893) this classical author still adheres to the term idiopathic, because he is unable to fix on the ætiology of these abscesses; but it will be seen from the anatomical facts established by Gillette and the bacteriological data given in my work that the existence of retropharyngeal adenitis, superinduced by an acute infecting agent, such as the streptococcus, will apply to those cases hitherto but little understood.

affections of the structures about the tonsils and nasal cavities in mild or severe grippes, come to be considered as causative factors. Hence it will be shown that many of these retropharyngeal abscesses are complicated by pneumonia or even empyema, not as a complication of any form of treatment as supposed, but as a direct extension of the infecting agent.

Bacteriology.—The pus which is contained in the acute retropharyngeal abscess is generally of a yellow-greenish color and creamy consistence; in some cases of mixed infection the pus has a distinct odor, but in the vast majority of cases this is not so. Rarely we find the pus of a *café au lait* color, from admixture of blood due to hæmorrhage into the abscess, possibly due to traumatism. A year ago the writer published in the *Centralblatt für Bakteriologie*, etc., the result of studies of the pus obtained under certain precautions which excluded contamination. Both the abscesses which projected internally and were treated by internal incision, and also those which formed a larger prominence externally and were opened by external incision, were examined. I refer those more particularly interested to this article for minutiæ of technics, and will describe here only the main results of our studies.

The writer has succeeded in isolating four distinct species of streptococci, which were the only micro-organisms present in the pus. The streptococci classify themselves into two varieties of the *Streptococcus brevis* and two of the *Streptococcus longus* class, and are thus named—the *Streptococcus brevis* (*a*) *pharyngis*, *Streptococcus brevis* (*b*) *pharyngis*, *Streptococcus longus* (*a*) *pharyngis*, and *Streptococcus longus* (*b*) *pharyngis*.

In this paper I shall not enter into bacteriological minutiæ of these various streptococci, but they can be found fully described in the work referred to. The *Streptococci breves* are small cocci forming short chains, and the *Streptococcus brevis* (*a*) differs from the *Streptococcus* (*b*) in being a smaller coccus, and in forming shorter chains than the *Streptococcus brevis* (*a*). The latter is a coarse strepto coccus and forms longer chains resembling the longer species.

Animal experiments with both streptococci varieties showed that they produced no effects similar to what is seen in experiments with streptococci taken from virulent pus. They were not virulent and the animals were not visibly disturbed in health by the injections.

The two varieties of *Streptococcus longus* (*a*) and *Streptococcus longus* (*b*), isolated from the pus of acute retropharyngeal abscess, differed also from each other in the fact that the *Streptococcus longus* (*a*) was a much coarser streptococcus than (*b*), and formed long chains, but these chains were not involved in knots so much as *Streptococcus longus* (*b*). In fact, the *Streptococcus longus* (*b*) resembles much that described by Rosenbach as the *Streptococcus tenuis*, but differs from this and from the streptococcus of sputum in not having the virulence characteristic of the latter.

Animal experiments with the *Streptococcus longus* (*a*) and (*b*) showed the former in most animals to be devoid of direct virulence. Most animals remained in undisturbed health; a few died after a time, of progressive emaciation; but one animal, a young rabbit, contracted a pleurisy from an injection of *Streptococcus longus* (*a*) *pharyngis* and died in three days. The *Streptococcus longus* (*b*) produced no visible effect on the health of the animals experimented upon. In no animals was tuberculosis produced from the injection of any of the pus in the pure crude state. This is important, showing that the contention of some observers that the acute retropharyngeal abscess in many cases is tuberculous is unfounded and not supported upon investigation.

We must conclude from this study of the bacteriology of the acute retropharyngeal abscess that the abscess in these cases is of a purely acute pyogenic nature, unconnected with any previously existing tuberculous diathesis or affection of the lymph nodes or bones of the spinal column. Apart from those cases which complicate infantile sepsis or scarlet fever, we must conclude also that the abscess is a benign disease, and its tendency is, when aided artificially by treatment, toward rapid recovery.

The writer's experience includes seventy-seven cases of retropharyngeal abscess. A study of this list of cases drawn from a large clinical material—infants and children below ten years of age—shows that the acute retropharyngeal abscess is pre-eminently a disease of infancy: Four aged one to three months, ten aged three to six months, forty-one aged six to twelve months, ten aged a year to a year and a half, five aged a year and a half to two years, two aged three years, two aged five years, one aged six years, one aged seven years, one aged nine years.

Of these, one infant was aged one month and two were of the tender age of two months. It will thus be seen that from my material, which I consider sufficient for statistical purposes, retropharyngeal abscess is most frequent from the sixth to the twelfth month of infancy and not so common below the third month. Most of the cases occur in infants below the twelfth month and the next from the twelfth to the eighteenth month, when the frequency diminishes, and above the second year of life the retropharyngeal abscess is quite uncommon. It is therefore *par excellence* a disease of the first two years of life and most frequent during the period of suckling.

I have very little that is new to add to the general symptomatology of these acute retropharyngeal abscesses of infancy and childhood. The symptoms have classical portrayers in Henoch and Bokai, who have entered sufficiently into this subject. I wish, however, to say that in a number of cases it has been possible for me to follow the gradual development of these abscesses from a simple angina catarrhalis or lacunar or follicular amygdalitis. Both in my clinic and in private practice cases have come under my observation where, for a few days or a week, careful daily observation of the fauces presented nothing abnormal but what is found in an amygdalitis of an ordinary kind. Then gradually the fauces presented a swelling in the centre of the pharyngeal wall or to one side, and gradually the physical signs of retropharyngeal abscess developed. The physical signs of the acute retropharyngeal abscess obtained by inspection and careful digital palpation of the fauces are the only certain means of diagnosis. True, the

voice and cry of the patient have undergone a remarkable change, and one which, when once heard, is invariably and immediately recognized. It leads us to suspect the disease we are dealing with. The head of the patient is sometimes thrown back, and this peculiar nasal and metallic voice is given forth by the infant, which leads us to suspect pressure on the larynx or parts about concerned in the formation of the voice. The infant refuses to nurse, is restless, waking up with a start at intervals, and breathing, if the abscess is of considerable size, with the greatest difficulty.

The diagnosis is not difficult if one has met a few cases; the symptoms are striking and not to be mistaken, yet we can readily see how they might be mistaken for acute laryngeal disease or diphtheritic paralysis of the fauces. In a great number of infants, not in any way suffering from retropharyngeal abscess or disease behind the pharynx, if the fauces are inspected while the head of the infant is thrown back, there is a distinct apparent prominence seen in the fauces to one or the other side, caused by an anomalous development and prominence of the vertebral bodies in this region. The only true way to find out what we have in view is to carefully explore the walls of the pharynx with the index finger, and see if this prominence is not simply normal to the particular infant. I have frequently been able to correct a mistake in this way. And here it may be said that digital exploration of the fauces of an infant is not a procedure devoid of danger. A small and tapering finger is a fortunate possession in these cases. Rough manipulation with a large finger seems to eventuate in cases that I have met with in a subsequent condition of prostration of the infant, which is not relieved by operation and evacuation of the abscess. I will enter more fully into these cases in another place. We must in exploring the fauces have in our mind several conditions which either are the accompaniment of or simulate retropharyngeal abscess. There are cases in which there may be a retropharyngeal adenitis in which simply enlargement of the retropharyngeal lymph nodes has occurred, due to either pyogenic infection or tuberculous or syphilitic disease, but in which no suppuration has taken place. I have never seen a case in which syphilis could enter as a causative factor, but I have met with a few cases in which there was a retropharyngeal adenitis, but the enlarged node was hard and did not present any signs of suppuration. We should recognize these cases, as an operation on such nodes is extremely unsatisfactory and affords no relief. The hard swelling persists. A corollary to this is that, even in acute pyogenic retropharyngeal abscess, the diagnosis is not necessarily to be immediately followed by operation, as I shall point out.

Sometimes the abscess is so low down, opposite the larynx, as not to be visible through the opening in the fauces in these cases; digital exploration alone can fix the location and diagnosis. It is unfortunate to burst an abscess while examining with the finger, for then, the whole fauces being occupied, it is just in such cases that pus is apt to flow into the larynx. Severe pressure should be absolutely avoided.

Before considering the complications of the acute retropharyngeal abscess it is well to consider what happens if the abscess is left to Nature. In those cases in which I have been compelled, by lack of consent of the parents, to desist from incision, the abscess, if it was in the mid-line of the pharynx or to one or the other side and purely retropharyngeal, not involving too many of the deep lymph nodes at the side of the neck, has burst and gradually discharged its contents, and spontaneous cure has resulted. I desire to emphasize this fact because certain authors, in their anxiety to impress the necessity of seasonable incision, have, it seems to me, exaggerated the danger of leaving the abscess unincised. They say, but without much proof, that if discharged during sleep the pus is apt to be inspired into the larynx and thus cause suffocation. This result could only be brought about, it seems to me, when the abscess was of enormous size, occupying the fauces fully, and in bursting should discharge all the contents at once, and must also be situated so as to press upon the arytænoid. As a matter of fact, I have watched cases left to Nature because the parents against my advice refused operation. These abscesses burst and discharged very gradually through minute openings, and in no case have I known an infant suffocated during the natural course of cure. Bokai junior records such a case. The infants in all cases got well. I should not like to be quoted as in any way favoring the *laissez faire* method of treatment, but to the reader it must seem, as it did to me, that the danger of a sudden spontaneous rupture of these abscesses has been much exaggerated; though in exceptional cases, as in Bokai's case, death has resulted from bursting of the abscess during sleep, and it is supposed that pus was aspirated into the larynx.

Complications.—There are a set of cases of retropharyngeal abscess in which symptoms of asphyxia set in, and, in spite of incision of the visible portion of the pharyngeal tumor, prostration and symptoms of pressure on the larynx continue and the infant seems in imminent danger of death. Bokai records one such case in an experience of fully three hundred cases in which, after incision of the abscess, tracheotomy was resorted to with relief and ultimate recovery of the patient. In the writer's seventy-seven cases, one such case occurred in which the infant was operated upon outside the clinic and brought to the clinic in a moribund condition by the much-frightened physician. Here not only were there symptoms of extreme collapse, but all over the chest could be heard loud moist râles. It was surmised that the infant might have inspired some of the contents of the abscess. Inasmuch as the air seemed to enter the lung freely, tracheotomy was not resorted to. The infant died.

Bokai junior records one case in which inspiration of pus in a case in which the abscess opened spontaneously resulted in death.

In another case laryngeal spasm is recorded, and in one case we have a record of complicating basilar meningitis. In another case diphtheria caused death, and in still another "schluck" pneumonia. Of my seventy-seven cases I may say here I have been fortunate not to have any patient die of spontaneous rupture of the abscess or subsequent pneumonia. Platot and Variot have lately recorded the death of an infant suffering from a retropharyngeal abscess at the

moment of incision. In this case death did not occur from invasion of the air-passages with pus, but from "reflex syncope." These cases form a very trying percentage of all the cases of retropharyngeal abscess. An incision is made, but the symptoms remain unrelieved, and the prostration of the infant not only continues but increases. Reflex syncope has been offered as an explanation. Pressure on the important nerves, the sympathetic and pneumogastrics, by the manipulating fingers in the neck has been thought to cause this peculiar condition of prostration, referred to once before in this paper. Yet another explanation is that in these cases we have to deal with a sort of burrowing abscess in which, though we open above the visible swelling, yet farther below there are additional foci of pus which still press on the larynx and important parts in spite of the upper opening; this, combined with the effects following operative manipulations, only increases the symptom-complex, to the great danger of the little patients. Bokai records one case of a burrowing retropharyngeal abscess which caused death by hæmorrhage from its opening into a large blood-vessel.* In spite of all that has been said of the complication I must say that the prognosis of the uncomplicated retropharyngeal abscess, if treated by timely interference, is exceedingly good. Most of the cases end in recovery. Of Bokai senior's one hundred and seventy-nine patients, only six died; and of Bokai junior's one hundred and thirty-eight, only eight died—4·4 per cent.

Treatment.—One would suppose that in a disease in which the gross lesion was always in sight and easily located the treatment would be immediately plain and apparent, yet in no disease is this less so than in acute retropharyngeal abscess, where there is the greatest diversity of opinion among those of large experience. Some (Bokai) advocate the internal incision in all cases, and others, who seem to have equally good results, advocate the external incision (Burkhardt). Bokai junior, of one hundred and thirty-eight cases, operated in one hundred and six from within and in ten externally; while Burkhardt, with a very limited experience, advocates external incision in all cases, for the following reasons: If we incise through the mouth it is difficult to keep these abscesses open or to treat them antiseptically. Burkhardt thinks that if you can give anæsthesia it is desirable, and that external incision allows of exploration of the abscess and enables us to keep it open. Meyer advocates the method of Burkhardt and has employed it in four cases. He advocates it in tuberculous cases especially.

Bokai says that in one hundred and six cases in which he operated internally, he was compelled to reincise two or more times in seventeen cases only, supporting his contention for internal incision. In looking over the ground it struck the writer that the advocates of internal or external incision or operation were influenced by their experience in certain sets of cases. If the reader will refer to the early part of this paper he will see that there are distinct sets of cases, and it seems that in some of these cases the internal incision is quite sufficient and curative; in others, the internal incision would be not only less effective than the external one, but distinctly dangerous. In those cases (and these form the vast percentage of my seventy-seven cases) in which the acute retropharyngeal abscess pushes forward the pharyngeal wall and appears in the mid-line of the fauces about opposite the epiglottis, or a little to one side of the median line, internal incision in the manner to be described not only is effective, but relieves the patient at once. I do not think that Burkhardt's contention that these abscesses, if opened internally, can not be drained or treated antiseptically is so important as would appear at first sight; a good, free longitudinal incision, subsequently enlarged with a forceps guided by the finger, rarely closes up. There are cases where we must reincise, but these are not so common. I have reincised or reopened the abscess which had been opened by internal incision after two days, but recovery has always resulted. As to antisepsis, we must remember that, as I have shown in my cases, more than seventy per cent. occur in infants at the breast, below twelve months; the food is a fluid one, there are few teeth, sometimes none, and the demands for antiseptic treatment of what is primarily an infectious abscess are less than would be the case in the adult subject. Then why subject the patient of such tender age to so severe an operation as external deep dissection to reach an abscess centrally located, if simple internal incision affords immediate relief and is curative?

Method of Incising Internally.—My method of internal incision is almost identical with that employed by Bokai senior, though I employed it before reading his work.

The infant, having been freed from all articles of dress, is held in the lap of an assistant in such a manner as to face the light. The head is held firmly by a second assistant. The operator, standing in front of the patient, depresses the tongue firmly with a depressor, exposing the abscess. A bistoury, with the blade covered by rubber plaster, leaving only half an inch of the point exposed, is inserted into the abscess, and an incision made running longitudinally from above downward, inclining, if at all, toward the median line. The assistant is instructed to hold the infant forward, face down, quickly, as the abscess is incised, so that the pus may escape from the mouth. By exerting gentle pressure at the side of the neck this is facilitated. Sometimes a blunt-headed dressing forceps, guided by the finger, may be inserted at the point of incision and the opening carefully dilated to allow complete escape of the contents.

It is unfortunate to incise an abscess in which the gland has not suppurated; here the knife enters a hard mass; little or no pus escapes; the symptoms are not relieved. It is desirable, therefore, to wait until we can discover deep fluctuation at least before incising. A day's delay is sometimes indicated, but is not so fraught with danger as some would lead us to suppose. It has been advised to guide the point of the knife with the finger when

* There are some cases of retropharyngeal abscess situated especially at the side of the neck in which, if not opened until late in the disease, the abscess burrows and bursts into the internal ear; pus is discharged from the ear. Pressure on the abscess in the pharynx increases the discharge through the ear, so that the direct extension can not be doubted.

the abscess is high or low, instead of exposing with a tongue depressor. This I have found necessary only in rare cases, where the abscess is deep, low, opposite the cricoid cartilage, and does not come into sight. After the operation I put the infant to the breast; the process of suction seems to favor drainage. There is a set of cases in which operators have inserted the finger into the mouth and forcibly or recklessly manipulated the abscess to facilitate drainage. In some of these cases symptoms of collapse supervene as described elsewhere. I would strongly advise not to insert the finger after incision at all, or only if the abscess is high. Pressure can more effectually be exerted externally from the side of the neck than from the inside, and with no such disastrous results. In some cases incision of the main tumor does not relieve the patient; here we may have a second collection of pus lower down, opposite the cricoid cartilage, and this also has to be evacuated before allowing the patient to withdraw from observation. These cases may be suspected if, after the primary incision, the breathing and voice do not immediately improve. In all such cases a search should be made for other collections of pus.

The second set of cases which have come under the notice of the writer are those in which several of the deep cervical glands at the side of the neck are involved, with the primary abscess behind the pharynx. The abscess, when inspected from within, appears to one or the other side of the fauces, but not to such an extent as to encourage one to think of inserting a knife into the abscess in this dangerous region. The external swelling is quite extensive, but well covered by soft parts. In these cases the abscess is more safely approached from without by careful incision of the overlying tissues. Sometimes the operator must dissect quite deeply before he strikes the abscess proper. Considering the important parts in this region one can readily understand that in a few rare cases the abscess may require a dissection under anæsthesia. These cases, however, are exceptional in my experience.

I have never operated on tuberculous abscesses, but should think rational principles would require that, if they are opened, this should be done from without, with thorough drainage and with antiseptic precautions. I have never had the ill fortune to meet with the burrowing septic abscesses referred to by some writers as following the exanthemata and breaking into the mediastinum if not treated, and causing serious complications. Such cases must needs be treated by external incision and drainage, as the internal operation would scarcely be adequate and would not prevent or stop the burrowing tendency. From what has been said of treatment it will be seen that the ætiology and classification of the variety of abscess we have to deal with becomes of the first importance.

Literature referred to in Text.

Bokai Junior. Henoch, *Pädiatrische Arbeiten*, 1890.
Bokai Senior. *Jahrbuch für Kinderheilk.*, 1876.
Gillette. *Paris Thesis*, 1867.
Gautier. *Des abcès rétropharyngiens*, etc., 1869.
Burkhardt. *Centralbl. für Chir.*, 1888.
Meyer, W. *Med. Record*, 1893.
Karewski. *Berlin. Klinik*, 1893.
Dabney. *Med. News*, 1893.
Koplik. *Centralbl. für Bakteriologie*, Bd. xvi, 1894.
Platot and Variot. *Jour. de thérap. infantile*, July, 1895.

66 East Fifty-eighth Street.

SUPRAPUBIC CYSTOTOMY FOR STONE,

*WITH A REPORT OF TWO CASES.**

By A. B. JOHNSON, M. D.

The writer has nothing new to offer to this society in regard to the operation of suprapubic cystotomy, but he hopes that the statistics prepared from the Roosevelt Hospital records of recent years may not prove devoid of interest. With the exception of two cases of operation by himself, whose histories are to follow, the operations were performed by Dr. Charles McBurney and Dr. Frank Hartley, through whose kindness the writer is able to present these statistics to the society.

Case I.—A. C., a man, aged fifty-nine years. Admitted to the Roosevelt Hospital September 29, 1895.

Previous History.—Gonorrhœa thirty years ago. No tubercular or kidney trouble. Patient is well preserved and well nourished. One year ago he passed for the first time bloody urine, and blood has appeared in the urine at intervals since. He has suffered from pain in the perinæum and glans penis and from frequent and painful urination. The stream has occasionally been interrupted.

Examination of his urine shows it to be cloudy, acid, of a specific gravity of 1·023. There is a considerable quantity of albumin present, as shown by heating. Microscopic examination shows pus in abundance, together with blood cells. The passage of a catheter is difficult on account of apparent obstruction in the fixed portion of the canal, but the bladder is competent. There is no residual urine. The introduction of a searcher reveals the presence of a stone. By rectal examination the prostate is found moderately enlarged and very tender.

Operation on October 4, 1895. Ether administered. Buttocks elevated six inches on a cushion. Bladder washed with boric-acid solution, after which seven ounces of the same solution were introduced into the badder and allowed to remain. The rectal bag was distended with six ounces of water. A three-inch vertical incision upward in the median line from the pubes was made and the recti and pyramidales separated to nearly the same extent. The peritonæum was pulled upward. The bladder was exposed and opened to the extent of an inch and a half in a sagittal direction. The forefinger introduced into the bladder through the incision detected two stones, one of which was adherent to the bladder wall on the right side. The stones were removed with the forceps, and the bladder wound was closed entirely with a double row of fine silk sutures, not including the mucous membrane.

The muscles and skin were united by catgut and silk sutures respectively throughout the upper two thirds of the wound. A rubber tube was introduced down to the bladder through the lower angle of the wound, the remainder of which was packed with iodoform gauze.

---

* Read before the Society of Alumni of Bellevue Hospital, February 5, 1896.

The patient was then placed in the lithotomy posture, and a staff was introduced into the urethra and cut down upon through a small incision in the perinæum. A large rubber catheter was introduced through the perineal wound into the bladder and held in place by a suture through the edges of the wound in the skin. A dressing of sterile gauze, a binder, and a T-bandage were applied.

The stones were of nearly equal size and phosphatic. Their measurements were $1 \times \frac{7}{8} \times \frac{1}{2}$ and $1 \times 1 \times \frac{1}{2}$ inch, and they lay in a deep pocket behind the prostate, which was moderately enlarged. The mucous membrane of the bladder was deep red in color and velvety in appearance.

Second Day.—Wound dressed; no leakage through the suprapubic wound. On the night of this day the patient's temperature rose suddenly to 103° F. The bladder was washed through the perinæum with boric acid. During the next twelve hours the patient's temperature fell to normal, and only rose once to 100° F., and that on the fifth day. Up to the tenth day the patient's bladder was washed once daily with boric-acid solution; during this time the urine contained a moderate amount of pus. The drainage through the perinæum was perfect and the patient had no pain or discomfort.

On this day the perineal tube was removed from the bladder.

On the twelfth day there was slight leakage from the suprapubic wound, but only enough to render the packing in the wound moist.

The tube was removed from this wound and the packing changed daily. Very slight leakage occurred from the bladder for two or three days longer. On the fifteenth day it had ceased. The packing was gradually diminished in amount, and on the twenty-first day the suprapubic wound was healed with the exception of a minute granulating area at its upper end caused by a stitch abscess. The perineal wound had already been completely healed for some days and had never given any trouble.

On the twenty-third day the patient was allowed to walk about, and on the thirty-third day he left the hospital with nearly clear urine and no undue frequency of urination (November 6th).

Case II.—Thomas C., aged sixty years; denies venereal disease. Four years ago patient began to suffer from frequent and painful urination. The pain was felt in the glans penis and perinæum during and after the act.

He was then treated for stricture of the urethra by division of the meatus and dilatation of the canal with steel sounds. For the past six months he has been much worse. All his symptoms have been aggravated; in addition he has passed bloody urine on several occasions. Sometimes the flow of urine is suddenly interrupted. The patient is a well-nourished and well-preserved man.

Examination of his urine shows it to be cloudy, of a specific gravity of 1·010, acid, albumin in moderate amount. Under the microscope the cloudiness is seen to be due to the presence of a considerable quantity of pus.

The searcher was introduced with some difficulty through the fixed portion of the urethra, and detected the presence of stone in the bladder. The prostate feels normal.

Operation, October 13th. Ether; operation as in Case I. Single stone removed by forceps; smooth, rather hard; size, $1 \times 1\frac{1}{4} \times \frac{5}{8}$ inch; phosphatic. Bladder, chronic cystitis of moderate grade. Bladder wound closed as before. Perineal drainage.

October 16th (third day).—Dressed. Bladder has drained perfectly. Packing and dressings in suprapubic wound appear to be dry and free from urine.

18th (fifth day).—Tube removed from perineal wound.

20th (seventh day).—Suprapubic packing in wound a little moist. Bladder has been washed out daily through perineal tube, and after its removal through a catheter introduced through the urethra.

22d.—During irrigation of the bladder to-day a small amount of fluid appeared at the bottom of the suprapubic opening.

26th (thirteenth day).—The bladder wound has closed: there is no longer any leakage during irrigation.

The patient has suffered from varicose veins of the left leg and thigh, with occasional attacks of inflammation in or about the enlarged veins.

To-day there is a swollen, hard, tender area along the course of the saphenous vein in the left thigh, extending downward from the saphenous opening a distance of six inches. Wet dressings of acetate-of-aluminum solution were applied.

November 11th (twenty-ninth day).—The inflammation in the thigh has subsided. The wounds are healed, except a minute point of granulation at the lower end of the suprapubic scar.

To guard against a recurrence of the inflammation of the saphenous vein the patient was kept in bed until November 19th.

On November 27th (forty-fifth day) he left the hospital with normal frequency of urination and urine free from pus.

The writer believes that in cases admitting of suture of the bladder, the complete suture with perineal drainage possesses certain advantages over partial suture with tubular drainage through the suprapubic wound—namely:

1. Drainage takes place from a dependent point.

2. Drainage is lessli kely to be interrupted by plugging of the tube; when interrupted, it is easier to re-establish.

3. When suprapubic drainage is used, a considerable amount of leakage occurs around the tube in a large percentage of cases, usually during the first two weeks, necessitating a frequent change of dressings, and adding greatly to the discomfort of the patient and to the labor of caring for him.

4. Convalescence is probably shortened.

5. The complete suture of the bladder wound involves no additional risk, and the writer would employ it, except in cases in which (1) the stone can not be completely removed at the time of the operation; (2) in which severe bleeding occurs from the interior of the bladder; (3) in which such a degree of enlargement of the prostate exists as would render permanent drainage desirable; (4) in which so severe a form of septic cystitis is present that the nutrition of the entire bladder wall is seriously impaired.

This opinion is based upon observation of cases under treatment.

In the two cases which have been described the bladder wound was healed in fifteen and thirteen days respectively. The suprapubic wound was healed in the first case on the twenty-third day; in the second case, on the twenty-eighth day.

The amount of leakage occurring from the sutured wound of the bladder was in neither case sufficient to cause any annoyance.

The following cases of suprapubic cystotomy for stone were treated by operation in the Roosevelt Hospital since January 1, 1890. They outnumber considerably the cases of operation by other methods.

	Name and age.	Bladder and urine.	Prostate.	Character and size of stone.	Rect 1 and bladder distention.	Suture of bladder and soft parts.	Drainage of bladder.	Tube left in bladder.	Leak'ge from suprapubic wound.	Days in bed.	Days in hosp. after operation.	Suprapubic wound healed.	Fever and constitutional symptoms.	Complications.	Result.
1	H. W., 52 yrs.	Chronic cystitis 3 years; urine cloudy; foul smell; alkaline, purulent, and bloody.	Normal.	Phosphatic; large size.	Bladder, 12 oz.	Partial of bladder, catgut; soft parts partial.	Suprapubic.	32 days.	10 to 49 days.	30	58	58	Highest temperature, 101° 2d day; other symptoms slight.	Retention of pus and urine in wound, which was reopened on 10th day.	Some cystitis remains; bladder holds 6 oz.
2	E. S. R., 72 yrs.	Long time cystitis; 4 oz. residual, acid; blood and pus.	Considerably enlarged in both lateral.	Five stones; uric acid and urates; $\frac{3}{4} \times \frac{1}{2}$ in.	Bladder, 10 oz.	Bladder partial, catgut; soft parts partial.	Suprapubic.	12 days.	37 days.	28	45	45	No fever nor constitutional symptoms of moment	Slight retention and suppuration in suprapubic wound.	Very slight cystitis; residual, 4 oz.
3	C. G. S., 44 yrs.	Cystitis 4 yrs., urine alkaline; much pus.	Normal.	Uric acid; $2\frac{1}{4} \times 2\frac{1}{4} \times 1\frac{1}{2}$ in., 3 oz. 7 drms.	Bladder, 6 oz.	Bladder partial, catgut; soft parts partial.	Suprapubic.	13 days.	19 days.	13	21	21	100° 2d and 3d days.	None.	Slight cystitis.
4	W. H., 52 yrs.	Dilated and trabeculated large pouch, with narrow opening post.; mod. cystitis; $\frac{1}{4}$ urine residual	Middle lobe enlarg'd and removed as a pedunculated growth.	Two, phosphatic; $1\frac{1}{2} \times \frac{3}{4} \times \frac{1}{2}$, $\frac{5}{8} \times \frac{1}{2} \times \frac{1}{3}$ in.	Bladder, 10 oz.	Bladder partial, catgut; soft parts partial.	Suprapubic.	17 days.	35 days.	30	50	40	None of moment.	Much trouble with suprapubic drainage.	Slight cystitis; residual, 4 oz.
5	G. S., 62 yrs.	Cystitis 7 yrs.; urine acid; much pus; catheter.	Middle lobe enlarged, $\frac{3}{4}$ in. diameter; removed	$1 \times \frac{1}{2}$; medium hardness.	Bladder, 8 oz.; rectum, 8 oz.	Bladder partial, soft parts partial.	Suprapubic.	15 days.	32 days.	30	43	43	No rise of temperature.	None.	Cystitis improved; q. 5 h., voluntary.
6	E. B., 64 yrs.	Cystitis 7 yrs.; ammoniacal urine; stone adherent; bladder incrusted and sacculated.	Normal.	Large phosphatic, removed piecemeal; also 2 in. of a rubber catheter.	Bladder, 6 oz.	Wound packed.	Suprapubic.	30 days.	55 days.	32	231	116	100° once after operation.	Patient feeble and senile; septic cystitis; small calculus passed per urethra 59th day; 2 small calculi removed through evacuator on 181st day.	Cystitis and general condition improved.
7	P. W., 32 yrs.	Cystitis 2 yrs.; urine 1·020, acid; much pus and albumin.	Normal.	Phosphatic stone, containing a jagged fragment of wood as nucleus; $2 \times 1\frac{1}{2} \times 1\frac{1}{2}$ in.	Bladder, 10 oz.; rectum, 10 oz.	Bladder partial, catgut; soft parts partial.	Suprapubic.	13 days.	20 days.	15	42	39	103° on 2d and 3d days after operation.	Fever as stated.	Cystitis cured.
8	O. H. B., 70 yrs. (Dr. Hartley)	Cystitis 3 yrs.; alkaline; pus, blood, and triple phosphates.	Normal.	$2\frac{1}{4} \times 1\frac{3}{4} \times 1$ in.; character not stated.	Bladder, 6 oz.; rectum, 6 oz.	Bladder partial, silk; soft parts partial.	Suprapubic and perineal.	Suprapubic, 17 days; perineal, 19 days.	34 days.	21	40	Suprapubic, 39.	None.	None.	Cystitis cured.
9	E. B., 20 yrs. (Dr. Hartley)	Friable masses of chewing gum and phosphates; very adherent to bladder.	.....	Cystitis 9 mos.; 1·028, acid; pus and blood.	Bladder, 5 oz.	Bladder partial, catgut; soft parts partial.	Suprapubic and perineal.	Suprapubic, 23 days; perineal, 33 days.	26 days.	28	80	Suprapubic, 37; perineal, 60.	100° for 5 days after operation.	Portions of stone washed away subsequent to operation; gastro-enteritis 12d to 50th day.	Cystitis cured.
10	S. W., 17 yrs.	Cystitis 4 mos; urine 1·020, acid; pus.	Normal.	Large stone.	Bladder, 6 oz.; rectum, 6 oz.	Bladder partial, catgut; soft parts and perineal tubes.	Suprapubic and perineal tubes.	Suprapubic, 2 days; perineal, 17 days.	15 days.	30	32	Suprapubic, 21; perineal, 26.	Slight.	None.	Cystitis cured.
11	C. A. S., 19 yrs.	Cystitis 1 yr.; 1·020, alkaline; pus and granular casts.	Normal.	Phosphatic stone, considerable size.	Bladder, 6 oz.; rectum, 6 oz.	Bladder complete, catgut; soft parts partial.	Perineal tube.	Perineal, 25 days.	Not mentioned; none.	Not stated.	39	Suprapubic, 38; perineal, 37.	102° once.	Suppuration in suprapubic wound; sutures removed from skin.	Cystitis cured.
12	J. J. S., 39 yrs.	Cystitis 7 mos.; 1·025, acid; pus, blood, oxalate crystals.	Normal.	Phosphatic stone containing nucleus of chewing gum.	Bladder, 6 oz.; rectum, 6 oz.	Bladder complete, catgut; soft parts partial.	Perineal.	Perineal, 16 days.	Slight leakage until 4th day; none thereafter.	Not stated.	44	Suprapubic, 31; perineal, 44.	101·4° on 3d day.	Slight suppurat'n in suprapubic wound; an exanthem like measles on 12th day; rise of temp. to 103°.	Cystitis cured.
13	M. A., 59 yrs.	Cystitis and hæmaturia 10 yrs.; clear, acid, 1·030, albumin; ± a few pus cells; various casts.	Very much enlarged prostate; metal catheter passed with great difficulty.	Not stated.	Bladder, 8 oz.; rectum, 8 oz.	Bladder complete, catgut.	Perineal.	.....	None.	.....	4	Wound cleaned; bladder apparently healed p. p.	101·5° 2d day, 99° at death.	Suppression of urine; uræmia.	Died.
14	A. C., 59 yrs. (Johnson.)	Cystitis and hæmaturia 1 yr.; 1·023, acid; pus, blood, albumin.	Moderate enlargement.	Two, $1 \times 1 \times \frac{1}{2}$, $1 \times \frac{7}{8} \times \frac{1}{2}$; phosphatic.	Bladder, 7 oz.; rectum, 6 oz.	Bladder complete, silk; soft parts partial.	Perineal.	10 days.	12 to 15 days.	23	33	21	103° on 2d day; fell and remained below 100°.	None.	Cystitis cured.
15	T. C., 60 yrs. (Johnson.)	Symptoms of cystitis 4 yrs.; 1·010, acid; albumin abundant; pus.	Normal.	One, $1 \times 1\frac{1}{4} \times \frac{5}{8}$.	Bladder, 7 oz.; rectum, 6 oz.	Bladder complete, silk; soft parts partial.	Perineal.	5 days.	7 to 13 days.	37	45	29	None.	Phlebitis saphenous vein.	Cystitis cured.

In general the operation was conducted as in Case I, previously described. The Trendelenburg posture was not used in any case so far as I know. When practicable, the patients were prepared for operation by repeated irrigations of the bladder with boric-acid solution, and by the internal administration of boric acid or salol, or both. The method of treating the bladder wound varied in different cases, as will be described. The rectal bag was omitted in the more recent cases.

The cystitis remaining after operation was treated in some cases by prolonged drainage and by irrigations of the bladder with boric-acid solution, permanganate-of-potassium solution, and weak solutions of nitrate of silver.

In the cases in which the cystitis was moderate, the effort was made to get the bladder wound closed as soon as possible, and after its closure the irrigations were continued through the urethra until the patient left the hospital. In a few cases the patients were obliged to return for short periods to the out-patient department for further irrigations.

The closure of the suprapubic wound was hastened in some cases by secondary suture; in others, by strapping and by the application of Peruvian balsam, powdered naphthalene, and strong solutions of permanganate of potassium to the raw surface.

Marked shock was not present after any of the operations. In general, fever was absent, or limited to a single moderate rise of temperature on the days immediately following the operation. Kidney complications, as the result of operative interference, were observed in only one case. In detail, the histories were as follow: Fifteen cases—all males.

The average age of the patients was 44·6 years. The average duration of symptoms was 2·5 years.

In five cases the prostate was enlarged. In two cases a portion of the middle lobe was removed.

Marked cystitis was present in every case but one.

In nine cases partial suture of the bladder was done. In five the bladder was closed completely by sutures. In one case the bladder wound was left open.

In seven cases a single tube and siphon were used for drainage through the suprapubic wound. In these cases the tube was left in the bladder an average of eighteen days. In these cases the suprapubic wound ceased to leak after thirty five days post operation on the average. These patients were confined to bed on the average twenty-five days.

In three cases both suprapubic and perineal drainage was used. In these cases drainage of the bladder was kept up for twenty-three days on the average. The bladder ceased to leak through the suprapubic wound on the twenty-fifth day. They were confined to bed twenty-five days on the average.

In five cases perineal drainage, with complete suture of the bladder, was practised. One of these patients died of uræmia, but inasmuch as the fatal result can hardly be attributed to the method of drainage and suture it may be omitted.

In the four remaining cases, then, the bladder was drained through the perinæum an average of nineteen days. The bladder ceased to leak after eight days on the average. The perineal fistula closed rapidly in each case and gave no trouble.

These patients were confined to bed on the average thirty days or thereabouts. In two cases the number of days these patients were confined to bed is not stated in the history, but they were discharged from the hospital in thirty nine and forty-four days respectively, and it may be presumed that they were out of bed at least ten days before they left the hospital.

The patients, to the number of ten, whose bladders were not sutured completely remained in the hospital an average of sixty-four days; omitting one patient who remained two hundred and thirty-four days, they staid forty-eight days. In the cases in which the bladder was sutured completely the average stay in the hospital was thirty-eight days.

The only serious complication recorded occurred in the fatal case of uræmia.

The ultimate results of the operation were favorable in all but one case. Eight patients were discharged without cystitis. In six cases the cystitis was much improved.

As to the comparative merits of crushing and evacuation as compared with the suprapubic operation, the writer believes that the latter possesses certain advantages:

1. Less special skill is required for its safe performance.

2. Septic processes having become infrequent as the result of improved antisepsis, the mortality should be no greater than follows crushing.

3. Greater likelihood of the entire removal of the stone.

4. A period of rest for the inflamed bladder and a more complete cure of the cystitis.

5. The ability to remove complicating conditions, such as unsuspected enlargement of the median portion of the prostate, or adherent stone, or a stone containing a foreign body—wood, chewing gum, a portion of a catheter—as a nucleus.

No. 46 West Seventeenth Street.

A CASE OF MILD STUPOROUS INSANITY

IN WHICH IT WAS POSSIBLE TO INDUCE ILLUSIONS, HALLUCINATIONS, AND AUTOMATIC ACTS BY SUGGESTION.

By ALLAN McLANE HAMILTON, M. D., and W. S. BROWN, M. D.

Those who see much of the insane are familiar with various atonic mental and physical states that are presented particularly by asylum patients and in cases of apathetic insanity, with mental and physical depression, which, whether they follow prodromal excitement and muscular activity or not, are attended by more or less inhibition. Some of these cases may present little or no real intellectual perversion in the true sense of the term, there being an absence of delusions, hallucinations, or concept disturbance; there is only a torpor, which indicates a lowering of tone of more or less

gravity. These patients are at times in such a state of receptivity that it is possible to convey by suggestion certain impressions and ideas which may, under proper stimuli, be converted into corresponding expressions, the blankness of the receptive apparatus and the feebleness of controlling power being such that the result is a suspension of inhibition, so that the superior cortical cells do not act at all in a directing way, but the middle and lower cortical layers alone perform their functions. In other words, there is a condition which suggests that which exists during the dream state. The muscular inactivity is one indicating an apparent suspension of will, except so far as the simplest acts are concerned, and these are possible only after the individual is roused, and are not repeated unless fresh stimuli are brought to bear.

The muscular condition is sometimes one of rigidity, of a cataleptoid nature, which not only may be evoked by passive movement, but seems, as it did in the case to be presently reported, to indicate a sudden disruption of communication between the cerebro-spinal centres and the muscles themselves—sudden distractions, which signaled the exercise of a higher kind of power than that which inaugurated the primary action, being sufficient to create new impulses, leaving the particular voluntary act unfinished and the muscles in such a condition that they became the seat of cataleptoid rigidity.

A well-known symptom complex, which is different from that under consideration, is *catatonia*, but in this there seems to be none of the extreme rigidity under consideration, which, as a rule, occurs under the most varying circumstances. Paretic dementia and certain varieties of hysteria are all accompanied at times by muscular stiffness, amounting sometimes to catalepsy, but in this disease the mental state is more or less clouded. Janet, in his valuable treatise upon hypnotism, alludes to the indirect forms of hallucination and delusion that may follow certain suggestions in insane patients, and refers to Moreau, De Tours, and others, who have studied the voluntary production or transfer of hallucinations by direct suggestion or by the influence of an existent subconscious idea which is stimulated by primary suggestion and leads to expression of false perceptions.

The peculiarity of the case the history of which we are about to relate is that at the time that certain experiments were made, there was no apparent perversion of ideas, but simply a want of energy, the patient being able, when sufficiently urged, to reply correctly to questions and to state facts properly; but when an indirect act was suggested to him in such a way that the subsequent steps and consequences might easily be inferred, it was possible to start a train of uninhibited thought during which it was possible to draw forth the expression of hallucinations which were the creation of the original basal idea.

Mr. S., born in Buffalo, is eighteen years of age, and before he became ill was engaged as clerk in a bank. There is a neurotic tendency in the family, the grandfather on the maternal side having been insane, and there was also an aunt on that side who was very peculiar.

About fifteen months before the present attack the patient had to resign a position as telegraph operator on a railroad, as the responsibility oppressed him and led to a nervous condition accompanied by symptoms of mental disorder; he avoided policemen, as he feared being arrested for some negligence while in the railroad office, etc. There is evidence that masturbation was to some extent responsible for his condition at this time.

He recovered after a few months, and after taking a course in a business college secured employment as messenger in a bank. He was well and cheerful during the summer, and was so industrious that at the end of the year he was promoted. His new position kept him closely confined in a badly ventilated basement, and made long hours and constant application necessary.

This soon proved too great a strain, as he slept poorly and talked of his work during his sleep. Eventually he had to remain at home; was quiet, but confused; after a few days he became very restless, requiring several men to restrain him. He would wander aimlessly about the house, or endeavor to go out into the street in the middle of the night. His conversation at this time was totally incoherent, and he took very little food.

When admitted into an asylum, on January 16, 1894, the patient was scarcely able to walk and was in a semi-stuporous state; his tongue was thickly coated, his lips and teeth were covered with sordes, and his pulse was rapid and feeble. While he appeared to appreciate in a vague way what was occurring about him, he was too confused and apathetic for his impressions to have the proper significance. He held on to his father's hand when he was leaving, but was not perceptibly distressed after he had gone.

January 17th.—He was given trional, ten grains, and slept well; he seems stronger this morning and pulls at his clothing; at intervals will keep all his muscles in a condition of tonic contraction for a considerable time. He does not speak except to mutter some name, and it is difficult to get him to take food. He has had a mild bronchitis and some elevation of temperature, but the temperature subsided after the obstinate constipation from which he was suffering had been relieved.

20th.—Is decidedly stronger, but refuses food and is fed with a nasal tube.

23d.—Sat up nearly all day and took a fair amount of solid food with evident relish. Some symptoms of a cataleptic tendency were observed to-day.

29th.—He sleeps well and takes his food well; he will answer questions after much urging, his replies showing that his memory and appreciation are not greatly impaired. He is emotional at times, but this is probably due to an hysterical tendency rather than to any mental distress. The mental condition is evidently one of extreme torpor, with fleeting illusions; for example, he addressed the matron as Queen Victoria. The cataleptic tendency has grown much more pronounced.

30th.—Dr. Hamilton called and examined the patient today; the catalepsy was well marked, the limbs remaining in any position they were placed in until the muscles were exhausted. As muscular rigidity is practically absent, and there is no other evidence of a lesion of the muscles, the catalepsy must be considered as a symptom of and dependent upon the peculiar mental condition. This condition is similar in some respects to that of a person under the influence of hypnotism. He receives suggestions as facts without reference to their absurdity, and as a result a suggestive illusion or hallucination is produced. For example, it was suggested that he saw a mouse on the table, and when asked if he saw one, indicated

that he did, and described its attack upon an imaginary cheese. A pen and a piece of paper were placed in his hands, and he was told to eat the soup, which he attempted to do, using the penholder as a spoon and the paper as a plate.

February 3d.—He was visited by relatives to-day, and, while evidently pleased to see them, he was too apathetic to speak or give expression to his pleasure.

13th.—The catalepsy is very pronounced to-day; this symptom varies from day to day and is gradually diminishing. There is additional evidence that it depends upon the cerebral disturbance in the fact that it is always more marked after anything which exhausts or depresses him mentally.

19th.—The patient was visited by his father and mother to-day; though he recognized them, he remained perfectly passive, and gave no evidence of affection. He wets and soils his clothes at times, and allows the saliva to dribble from his mouth.

24th.—He has been very dull and apathetic to-day, but will answer after repeated questioning. His answers are intelligent and show that his memory and appreciation are much more active than his appearance would indicate.

March 2d.—Visited by relatives who brought him flowers; he did not speak until repeatedly coaxed and encouraged. This failure to speak was undoubtedly due to the extreme cerebral torpor, as his expression indicated his pleasure; and when he finally spoke he thanked them very kindly for the flowers, but it required an unusual stimulus to produce any response.

10th.—The patient was more stupid than usual this morning and while out exercising he was encouraged to run. When once started he kept on in a straight line, and would have run into the side of the house if he had not been prevented. He plays ball considerably, tossing and catching the ball fairly well, but easily becoming tired. When very stupid he frequently leaves his arm fully extended, in the position it was in when the ball left his hand, until he sees it coming at him. If, for any reason, the ball is not returned, he will remain with his arm extended until he is spoken to or the muscles are exhausted.

This cataleptic manifestation, as before stated, evidently depends upon the cerebral disturbance, and is in some respects analogous to an automatic action. After the impression regarding the ball has produced the impulse and resulted in the ball being thrown, the continuance of that impulse keeps the arm extended until some other impression is received and acted upon, or exhaustion follows; the muscular action being continued in the same way in which it was, so as to cause him to continue to run until he came against the wall of the house.

April 10th.—He conversed very intelligently this evening regarding his home and the work he had been engaged in before his illness. He afterward wrote a letter, the beginning of which was connected and intelligible, but it became disconnected toward the last, which seemed to indicate that the effort had exhausted the cerebral energy.

His mental state is greatly influenced by the condition of his alimentary tract, as constipation or any disturbance of digestion will produce profound stupor. Active physical exercise always makes him brighter and more responsive, though he may be very tired physically.

30th.—The patient was very stupid this morning, and would not take his food voluntarily, although every effort was made to induce him to do so. When the tube was introduced the discomfort of the operation aroused him sufficiently to make him ask to be allowed to drink the milk.

We think we are warranted in concluding that in this case the catalepsy was dependent entirely upon the cerebral torpor or amentia. This is evident from the fact that muscular rigidity or other evidence of a lesion of the muscles was absent; it was always more pronounced after anything which caused cerebral exhaustion; and, finally, it has gradually diminished and at times disappeared as the patient's mental condition has improved.

EXTRA-UTERINE HÆMORRHAGE IN PARTURITION.

By C. C. THAYER, M. D.,
CLIFTON SPRINGS, N. Y.

This is one of the most anxious complications of labor. Fortunately it seldom occurs. Many an obstetrician of extensive hospital and general practice has never met with a case, and medical literature on this subject is correspondingly meagre. In the year 1830, Deneux, of Paris, wrote an able article on Blood Tumors of the Vulva and Vagina, which called forth during the following thirty years many other articles on hæmatocele, hæmatoma, hæmophilia, varix, and other subjects relating to *pathological* hæmorrhages in the puerperal state, by M. Nélaton, M. Huguier, M. Récamier, and M. Bernutz, in the *Archives de médecine*, June, 1848, and 1857; the *Bulletin*, June 4, 1851; and M. Bernutz's *Diseases of Women*, vol. i. Much later, Dr. Tilt, Dr. Hewitt, and Dr. Simpson wrote on kindred subjects; also Matthews Duncan, in the *Edinburgh Medical Journal*, November, 1862; but none of these describe exactly the kind of case intended by this article.

Dr. Tuckwell, of Oxford, writing on Effusions of Blood in the Neighborhood of the Uterus, 1863, ably describes the condition in general, but as resulting from various causes other than the conditions and processes of parturition.

I desire to call attention in this article to extra-uterine hæmorrhage induced by the conditions and processes of parturition—parturition mature, or parturition premature—abortion, miscarriage, or full-term labor.

The causes of intra-uterine and extra-uterine hæmorrhage in parturition are similar, except in location and expression, the one being within and the other without the uterine organ. Tumors, hæmatocele (effusion of blood into the pelvic peritoneal cavity), hæmatoma (effusion of blood into the pelvic subperitoneal cavity), hæmophilia (abnormal tendency to hæmorrhage), varix (venous dilatation), and tissue necrosis are among the infrequent causes; but that tubal "menstrual flux," or rupture of the Graafian follicles or parovarian sacs, could produce hæmorrhage in labor, or from labor, taxes credulity. The pre-eminent causes are ectopic or extra-uterine gestation and maternal and instrumental efforts in delivery, from ruptured tissue or burst blood-vessels, usually accidental and non-pathological. Tubal abortion and tubal rupture are fruitful causes of this form of hæmorrhage. If from tubal abortion, the hæmorrhage must necessarily be within the first weeks of pregnancy, for while the tube is being gradually dilated about the impregnated ovum, the fimbriated end is being correspondingly contracted by the general congestive, hypertrophic, and hardening influence of the process of ges-

tation on the unsupported termini of the tube, inclosing the fimbriæ and occluding the tube during the first two months of gestation. The hæmorrhage in this case is into the peritoneal cavity. If from tubal rupture, the hæmorrhage occurs at the time of rupture, which may be at any time during the puerperal state; and if tubo-ovarian (above the peritoneal covering), the effusion is into the peritoneal cavity; but if the rupture is in the bottom of the tube, the hæmorrhage is into the folds of the broad ligament, and in either case it must result in absorption, inflammation, or encasement, with new environments in some of the more pendent portions of the body—viz., the utero vesical, the præ-vesical, or Douglas's pouch.

While ectopic gestation is to be regarded as the most frequent cause of extra-uterine hæmorrhage in parturition, we must not pass unnoticed the rarest and gravest accident in labor—rupture of the uterine walls—which usually proves fatal to both mother and child. There may be hæmorrhage from a pre-existing adhesion, from infiltration, submucous or interstitial, into the walls of the vagina and vulva, from varicose veins, from fœtal or instrumental injury, from depraved tissue and abscess.

Diagnosis.—The symptoms indicating concealed hæmorrhage are sudden pain, shock, thirst, pallor, sighing, gasping, chills, sweat, restlessness, tossing of the arms, begging for help, dilated pupils, dimness of vision, rapid, tense, and contracted pulse, and subnormal temperature. The local and subjective symptoms of extravasations of blood into the substance of organs, areolar tissue, or internal cavities are swelling, dullness on percussion, displacement of organs or parts, succussion, and discoloration.

Treatment.—In extra-uterine hæmorrhage from tubal abortion or rupture, however much one might crave surgical interference for extricating the displaced fœtus, for reducing the tubal rupture, and for removing the extravasated blood, yet, as a thing is important according to its utility, surgery is not at first most important, because it can not be utilized. The condition that presses for attention above all others and demands immediate help is the systemic shock. The shock necessarily defers operation. Ergot and aromatic sulphuric acid in full doses should be given and continued; and trillium erectum, one drachm of the tincture in hot water every half hour, in connection with ergot or alone, should be administered; while subcutaneous injections of ether, brandy, or whisky, at a temperature of 110°, with copious draughts of hot water with a little table salt in it to sustain the volume of arterial fluid, hot milk diluted with hot water, beef tea, or hot gruel, with external heat to prevent collapse, should be pushed with energy, remembering that the chill of the shock is in itself devitalizing.

Nothing steadies and sustains the nervous system in shock better than subcutaneous injections of morphine, and a quarter of a grain should be given as soon as possible. Darkness, fresh air, and quiet are favorable conditions.

The first ray of hope in the case is recovery from the shock, the second from absorption of the extravasated blood, and the third from fœtal extirpation or capsulation. After recovery from the shock the treatment will be indicated by the determination of the effusion and products of conception. Surgery here may prove most useful. Should the effusion be intraperitoneal, the most probable determination is into the pouch of Douglas, whence it can be withdrawn by careful aspiration—a comparatively safe operation with the use of an aseptic aspirating needle fitted to a self-delivering hypodermic syringe, thus preventing the introduction of air into the peritoneal cavity. The products of conception in this case must be dealt with, if at all, by surgical interference.

Should the effusion and products of conception lodge in the broad ligament, cœliotomy is indicated, but without operation a fatal termination is by no means certain. Many spontaneous recoveries from this accident have been recorded, as well as many patients who in after years, as Dr. Watts says in his hymn, "Live at a poor dying rate," the cause of their impaired health pointing to this anomaly. Dr. Mann recites a case of fifteen years' standing where the fœtal remains were removed from the pouch of Douglas, and this was followed by recovery. Other authors speak of fœtal remains abiding capsulated for twenty, thirty, and forty years.

For preventing or overcoming inflammatory action, sitz baths of a temperature of from 70° to 80° F., for from ten to eight minutes, combined with the foot bath, of a temperature of 110°, or an ice bag over the affected region, with antiphlogistic remedies, are indicated.

Should hæmorrhage in parturition occur from rupture of a hæmatocele, hasty delivery and sustaining the patient are all that is required at the time. "The mere presence of a large amount of blood in the peritonæum," says Thomas (*Diseases of Women*, p. 498), "does not warrant evacuation. If, as time passes, suppuration . . . and septic absorption are manifested, . . . the mass should be discharged by incision."

Should there be rupture of the uterine walls, says Playfair (*Midwifery*, p. 392), and "the fœtus be entirely within the uterine cavity, the proper course to pursue is to deliver at once *per vias naturales*, either by turning, by forceps, or by cephalotripsy." If the child has escaped into the abdominal cavity, gastrotomy offers the best results, as is shown in Jolly's tabulated statistics of 564 cases:

Treatment.	No. of cases.	Deaths.	Recoveries.
Expectation	144	142	2
Extraction *per vias naturales*	382	310	72
Gastrotomy	38	12	26

In natural labor the extra uterine extravasation will drift along the course of the rectum and vagina, and, if extensive, will obstruct the fœtal progress, the ultimatum of which will be rupture of the vagina, vulva, or perinæum before delivery. As aspiration is better than rupture, it should be employed, and as far away from the genitalia as possible, to avoid subsequent sepsis. A case in hand will illustrate:

I was called to attend a lady, aged twenty-seven years, healthy, and a primipara. It was 1.30 A.M. Her pains at that time were only cervical. With an aseptic finger I found

the dilating os of about the size of a half dollar. At 2 A. M. I found rapid progress. At 3 A. M. the amniotic fluid was discharged. At 3.30 A. M. I found a vertex presentation, with a left occipito-sacro-iliac engagement, muscular contractions strong and rapid, pulse firm, "and every prospect brightened." At 4 A. M. she suddenly and unexpectedly began to look pale, her pulse was rapid and nervous, a cold sweat broke out, and a sudden anxiety seized both patient and doctor—now both in travail. On vaginal examination, I found on the left and outside of the vagina, in the cellular tissue and on a level with the cervix, a mushy mass which I diagnosticated at once as blood, and the fœtal occiput was impinging on it. At 4.30 the mass and head seemed of about the same size, and so vigorous and rapid were the uterine contractions and so firm was the resisting mass, that the previous vertex had become a face presentation, or so much so that the face and chin could be clearly outlined. Satisfied that the child could never be born till the mass was removed, I resolved to aspirate it; and while I was directing the servant to bring my instruments a strong uterine muscular contraction ruptured the vaginal wall from the lower third through to the left ischio-rectal fossa, discharging the most blood from the triangular space between the ischio-cavernosus and the transversus perinæi muscles, a wound three inches and a half long, and deep, with another rupture from this diverging outward toward the extended leg an inch and a half, making a large and ugly wound, out of which the fresh blood gushed with great force at first and flowed freely until the expulsion of the fœtus. On my pressing the fœtal face up at once, the occiput, now having ample room, rotated favorably during the next contraction, and the following contraction expelled the child, and the hæmorrhage ceased.

The collapsed state of the patient was now distressing. The pulse was hardly countable, the temperature was 96°, and the respiration was 11, with *besoin de respirer*, sighing, begging for help, bidding friends farewell, and sinking into a semi-unconscious state, covered with cold perspiration. A carbolized absorbent cotton pad was placed over the wound, the head was lowered, windows were opened, hot bottles were placed about the patient, hot milk diluted was freely and frequently administered with stimulants, and a subcutaneous injection of morphine, a quarter of a grain, with atropine, was given. Superficial rubbing and stimulation were vigorously pushed, and the patient was carefully watched by my colleague, Dr. Spaulding, and myself for five hours uninterruptedly before we felt it safe to leave her. We again sponged her body with a solution of bichloride of mercury, packed the vagina with carbolized absorbent cotton (1 to 60) to prevent infecting the wounds, irrigated them with carbolized hot water, and packed them with iodoform gauze—for they were deep—having previously shortened them with three deep sutures. Three times daily we used the vaginal douche with a carbolic solution, and repacked tightly with carbolized cotton, after which we irrigated the wounds and repacked them, being careful always not to unpack the wounds till after cleansing and repacking the vagina. The patient continued to improve, and after the "milk fever" we freshened the edges of the remaining wound and put in four more deep sutures—seven in all—and secured perfect union with complete recovery. The source of this quantity of fresh blood was not discovered.

Knowing how helpful one's experience may be to another, I have prepared this imperfect article not for those who have had more, but less, experience in the anxieties of obstetrics.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co.
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, APRIL 4, 1896.

THE ENTRANCE EXAMINATION IN THE STATE OF NEW YORK.

In this issue of the *Journal* we print the text of an act passed by the legislature in March. Having met with the executive approval, it is now the law of the State. It seems to us that this new law is not so desirable in some respects as it might be. It was passed at a time when what is known as the Standsfield bill was before the legislature, and perhaps its passage was favored by a grave fault having been pointed out in the Standsfield bill—that, namely, of not specifying with sufficient distinctness the rating necessary for a student to obtain in the various studies mentioned, or the average rating in all of them taken together, to qualify him to proceed with his medical course. The act that is now in force, the one passed in March, does state the requirements on this point, it is true, but somewhat blindly, as it seems to us, by a number of statements concerning "academic counts." The law does not define these "counts," and the term, we believe, is not generally understood. Statutes should be as easy of comprehension as it is possible to make them.

Another objectionable feature, we think, is that of allowing the regents, in their discretion, to license a man to practise if he passes the examination after giving evidence of five or more years' reputable practice, which they may accept as the equivalent of the preliminary education required of students entering upon the medical-college course and of that entire course itself as now laid down. The time for that sort of thing in the State of New York went by long ago. We can not suppose that the regents would exercise the power given to them in this clause of the law, but such a passage ought not to exist in any statute now in force in this State. In another matter, too, the law is too liberal; it exempts from the preliminary-education requirements certain persons who ought to have been able to meet them nearly six years ago, but have never yet done so.

There ought to be, we think, a provision in the law stating a certain period of time, and a short one, within which a student who asks for a preliminary-education certificate on the strength of evidence laid before the regents of his having received a satisfactory education, instead of earning such a certificate by passing the examination, should be informed by the regents of their decision in the matter. We learn that in several instances hardship has resulted from delay in this respect, sometimes protracted for months.

The amended Standsfield bill, which also we print in this issue of the *Journal*, seems to us preferable to the present

law in some respects. In the first place, its preliminary requirements seem to be higher. Certainly, it is easier for the student to understand what degree of proficiency he must show—he must give seventy-five per cent. of correct answers in each and every study, and there is no confusing balancing of "academic counts." It was chiefly the omission of this preciseness of requirement which made the original bill objectionable; now that it has been corrected, it seems to us a just and reasonable measure.

FLOATING BODIES IN THE JOINTS.

An interesting article entitled Ueber die Gelenkmäuse in ihrer Beziehung zu den practischen Aufgaben des ärztlichen Sachverständigen, by Professor Max Schüller, appeared in a recent number of the *Aerztliche Sachverstandigen Zeitung*. The author remarks that floating bodies in the joints are of interest as regards their ætiology and also as regards the histological changes which they undergo. Of preeminent importance in many cases, he says, is the question Are the floating bodies frequently or even in the majority of cases of traumatic origin—*i. e.*, caused by injury within joints which had previously been sound—or are they more frequently of pathological origin, caused by pathological processes? The opinion of German surgeons has been in favor of the greater frequency of pathological causes. According to them, injuries are only exceptionally the cause. Professor Schüller, by looking over the rich literature on the subject published during the decade from 1883 to 1893, has found that of a hundred and forty-three cases in which an operation had been performed, eighty-three (in seventy-eight of which the knee was the joint affected) were of traumatic, thirty-nine of pathological, and nineteen of unknown origin. It is noteworthy that there are comparatively few cases of pathological origin, since we meet often enough with diseases of the joints with the formation of villi on the synovial membrane and with enlargement and proliferation of the cartilaginous margins from which, one would suppose, floating bodies might easily be formed.

The paper treats especially of cases of traumatic origin, and enters into the different questions of how the form and severity of the injury correspond with the development of the floating bodies and of how coexisting pathological conditions may influence this development. The cases analyzed include those in which an operation was performed early, a few days or weeks after the injury, where the floating bodies were found to be fresh and almost unaltered fragments; and those which dated from a well-defined characteristic injury, in which symptoms peculiar to floating bodies in joints had manifested themselves, but in which an operation had not been performed until after a long lapse of time—in most of these instances after years. Of the eighty-five traumatic cases, seventy-eight were of the knee, five of the elbow, and two of the wrist. The injuries which may cause the formation of floating bodies are forced movements, either in normal curves or—which is probably more frequent—in an abnormal direction; and external forces acting directly upon the articular surfaces or their cartilaginous margins. In some cases both forms co-operate. When that is the case, bits of cartilage or bone are torn off. They may remain partly adherent or may be completely detached, either at once or subsequently, in the course of inflammation. The degree and extent of the difficulty depend more on the situation of the loose body in the joint and the kind of joint than on the size of the floating body. Thus it happens that floating bodies of the size of a pea may produce severe symptoms, while much larger ones may disturb the mechanism of the joint only slightly. The size of the traumatic floating bodies in joints varies a great deal. An analysis of recorded cases shows that the detachment of large fragments is by no means always brought about by a corresponding amount of force. Professor Schüller relates in detail, with illustrative drawings, two cases of his own which are especially instructive, as they show how the detachment is produced. In one of them the floating body consisted of a large fragment caused by a relatively simple injury, a fall upon the knee on a smooth floor, while in the other a considerable force detached only a small bit.

There are many conflicting ideas in regard to the question of how the floating bodies are produced. Experiments on the cadaver, made for the purpose of finding an explanation, have not shed much light on the question, for two reasons—namely, because the conditions in life are seldom so uncomplicated as they are in the dead body, and because the experiments have not been conducted in the proper way. To do justice to the description which the author gives of the production of floating bodies by means of forced movements would require more space than we can devote to it. A pathological process is mentioned which is in close relation to the production of traumatic floating bodies—namely, osteochondritis dissecans, or "quiet necrosis." Of practical interest is the relative severity of inflammations of the joints after slight injuries to them when chronic urethritis coexists. Professor Schüller has observed that contusion of the spongy ends of the long bones is extremely apt to cause the lodgment in them of producers of inflammation circulating in the blood. The formation of floating bodies may be prevented by immobilization of the joint. When floating bodies have been formed, their removal by operation is strictly to be insisted upon, the more so and the sooner because the disturbance which they cause increases with time.

MINOR PARAGRAPHS.

THE PLAYFAIR SLANDER CASE.

It is not easy to imagine that a man who has had the career of the eminent London obstetrician, Dr. Playfair, can wantonly expose facts or deductions fatal to a woman's reputation among persons who accept them, especially when the facts came to his knowledge incidentally to his professional

attendance on her, and the deductions were not indisputable. In view of the meagre character of our present information as to the testimony given in the trial of the suit brought against him by the woman, we can not fully judge of the extent to which he deserved the adverse verdict rendered, but it seems, so far as we can form an opinion, that he committed a very grievous error.

REPUBLICATION WITHOUT CREDIT.

"It is amusing," says the *Medical Record*, "to notice that some original items which were published weeks ago in the *Medical Record*, after going the usual rounds through our contemporaries' columns as anonymously appropriated matter, are ultimately quoted and credited to other journals by our New York neighbors, thus taking the longest way round to get the surest way home." We do not see how the *Record's* "New York neighbors" can avoid taking the waifs "home" under the mistaken notion that they are inducting into New York something good from without. We can hardly regard the performance as amusing, however; we have had the experience that the *Record* mentions, and have found it annoying. The fault, of course, is with the journals that borrow at first hand and are negligent as to giving credit; those that credit them with the borrowed matter are usually, we think, quite innocent.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending March 31, 1896:

DISEASES.	Week ending Mar. 24.		Week ending Mar. 31.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus	2	0	0	0
Typhoid fever	7	3	13	3
Scarlet fever	140	8	114	5
Cerebro-spinal meningitis	1	1	6	5
Measles	508	32	496	26
Diphtheria	222	33	211	24
Tuberculosis	279	136	304	119

Bellevue Hospital Medical College.—The graduation exercises were held on Monday, March 23d. The graduating class consisted of ninety-seven gentlemen. The successful candidates for appointment on the house staff of Bellevue Hospital were Dr. Raleigh William Baird, of Texas, Dr. Allie Walter Williams, of Georgia, Dr. William A. Chisholm, of Nova Scotia, and Dr. Charles Blount Slade, of Georgia.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from March 22 to March 28, 1896:*

Fisher, Henry C., First Lieutenant and Assistant Surgeon, is relieved from duty at Fort Yates, North Dakota, and ordered to Plattsburgh Barracks, N. Y., for duty.

Lippitt, William F., First Lieutenant and Assistant Surgeon, will report in person to Turrill, Henry S., Major and Surgeon, president of the examining board appointed to meet at Fort Riley, Kansas, on Tuesday, April 14, 1896, at ten o'clock, A. M., at such time as may be required by the board for examination as to his fitness for promotion.

Mason, Charles F., Captain and Assistant Surgeon, is granted leave of absence for two months and fifteen days, with permission to go beyond sea.

Price, Curtis E., Major and Surgeon, is granted leave of absence for two months, with permission to apply for an extension of two months.

The following-named officers will report in person to Greenleaf, Charles R., Lieutenant Colonel and Deputy Surgeon General, president of the examining board appointed to meet at San Francisco, Cal., on Tuesday, April 14, 1896, at ten o'clock, for examination as to fitness for promotion: Brooke, Benjamin, First Lieutenant and Assistant Surgeon; Ireland, Merritte W., First Lieutenant and Assistant Surgeon; Wells, George M., First Lieutenant and Assistant Surgeon.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending March 28, 1896:*

Ward, B. R., Passed Assistant Surgeon. Detached from Coast Survey Steamer Blake and ordered to the San Francisco, holding survey on Kane, J. J., Chaplain, in London, *en route.*

Wise, J. C., Surgeon. Ordered to examination for promotion, March 27th.

Society Meetings for the Coming Week:

Monday, *April 6th:* New York Academy of Sciences (Section in Biology); New York Medico-surgical Society; German Medical Society of the City of New York; Morrisania Medical Society, New York (private); Brooklyn Anatomical and Surgical Society (private); Corning, N. Y., Academy of Medicine; Utica, N. Y., Medical Library Association; Boston Society for Medical Observation; St. Albans, Vt., Medical Association (annual); Providence, R. I., Medical Association; Hartford, Conn., Medical Society; South Pittsburgh, Pa., Medical Society; Chicago Medical Society (annual); Cleveland Medical Library Association.

Tuesday, *April 7th:* Florida Medical Association (first day—Sanford); Tri-State Medical Society of Iowa, Illinois, and Missouri (first day—Chicago); New York Obstetrical Society (private); New York Neurological Society; Elmira, N. Y., Academy of Medicine; Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Broome (quarterly) and Niagara (quarterly—Lockport), N. Y.; Hudson (Jersey City), Essex (annual—Newark), and Union (annual—Elizabeth), N. J., County Medical Societies; Androscoggin, Me., County Medical Association (Lewiston); Baltimore Academy of Medicine; Medical Society of the University of Maryland (Baltimore).

Wednesday, *April 8th:* Florida Medical Association (second day); Tri-State Medical Society of Iowa, Illinois, and Missouri (second day); New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Tri-State Medical Association (Port Jervis, N. Y.); Medical Society of the County of Albany, N. Y.; Pittsfield, Mass., Medical Association (private); Philadelphia County Medical Society; Kansas City, Mo., Ophthalmological and Otological Society.

Thursday, *April 9th:* Tri-State Medical Society of Iowa, Illinois, and Missouri (third day); Society of Medical Jurisprudence and State Medicine, New York; Brooklyn Pathological Society; New York Laryngological Society; Medical Society of the County of Cayuga, N. Y.; South Boston Mass., Medical Club (private); Pathological Society of Philadelphia; New London, Conn., County Medical Society (annual).

FRIDAY, *April 10th:* New York Academy of Medicine (Section in Neurology); Yorkville Medical Association, New York (private); Brooklyn Dermatological and Genito-urinary Society (private); German Medical Society of Brooklyn; Medical Society of the Town of Saugerties, N. Y.; Cleveland Medical Society.

SATURDAY, *April 11th:* Obstetrical Society of Boston (private).

Answers to Correspondents:

No. 444.—The blank seems to us to contain ample provision for recording the data required.

Births, Marriages, and Deaths.

Married.

ODENEAL—STONE.—In Jackson, Miss., on Thursday, March 26th, Dr. Erskine P. Odeneal and Miss Annie Stone.

Died.

EDWARDS.—In Clearwater, Fla., on Sunday, March 29th, Dr. Emma Winifred Edwards, wife of Dr. Arthur W. Edwards, of Newark, N. J., aged fifty years.

LACEY.—In Danbury, Conn., on Tuesday, March 31st, Dr. William F. Lacey, aged seventy-three years.

MATHEWS.—In Portchester, N. Y., on Wednesday, April 1st, Dr. Edward F. Mathews, aged sixty-eight years.

SPENCER.—In Nashville, Tenn., on Thursday, March 26th, Dr. W. G. Spencer, U. S. A., retired.

WINSOR.—In Quidnick, R. I., on Wednesday, March 25th, Mrs. Carrie A. Winsor, wife of Dr. John Winsor.

Proceedings of Societies.

ASSOCIATION OF AMERICAN ANATOMISTS.

Annual Meeting, held in Philadelphia, on Thursday and Friday, December 26 and 27, 1895.

The President, Dr. THOMAS DWIGHT, of Boston, in the Chair.

(*Concluded from page 157.*)

The Nomenclature of Nerve Cells.—Dr. FRANK BAKER, of Washington, read a paper on this subject (see page 373).

Absence of the Fibrous Pericardium of the Left Side.—Dr. ADDINELL HEWSON, of Philadelphia, presented an interesting specimen of this condition, which he had found in the dissecting room of the Jefferson College. The specimen had been removed from the body of a man, aged fifty-four years, who had been an inmate of an insane asylum for four years previous to his death. By occupation he had been a scrivener. There was distinct absence of the fibrous pericardium on the left side, and an adhesion between the apex of the left ventricle and the lower anterior margin of the left lobe of the lung. The specimen showed in front the pleura, which inclosed the internal mammary artery and the left phrenic nerve, which had been displaced anteriorly from its normal position. An incision had been made in the median line to expose the vessels. The aorta practically had had no arch and was near the median line. The innominate artery was absent. The subclavian artery on the left side had been found at the highest part of the arch. There was a wide space between the subclavian artery at its origin and the point where it crossed the first rib. The vena azygos major made a very decided arch coursing over the right half of the chest wall.

While the patient had been confined in the asylum he had been in the habit of sitting with his knees drawn up and his head between his knees. As this posture had been the one habitually assumed by him, it might account, said the author, for the adhesions which were present. The course of the phrenic nerve on the left side was normal. The posterior veins were inside of the posterior fold of the pericardium.

The Descriptive Anatomy of the Human Heart.—Dr. WILLIAM KEILLER, of Galveston, Texas, read a paper on this subject. He stated that he injected a mass of gelatin into the right common carotid artery, or into the femoral artery, for the preparation of his specimens, and he found that when the heart had been so prepared it followed in all essential particulars the description of His's model. Thus viewed, he said, the heart was an irregular four-sided pyramid, the base of which rested on the diaphragm; the apex had been removed to afford attachments for the ascending trunks of the great vessels. It presented for examination five surfaces (including the base), a number of borders separating these, an anatomical apex, and a clinical apex. The anterior surface was triangular in shape. In sagittal mesial section it was parallel with the sternum. It included the greater part of the right ventricle, portions of the left ventricle, the left auricular appendix, the entire right appendix, and part of the right auricle. Its superior angle marked the anatomical apex, and here the surface merged into the anterior walls of the aorta and of the pulmonary artery. Its left inferior angle formed the clinical apex. Separated from it by the pericardium were the margins of the lungs and the pleura, the sterno-pericardial ligaments, the triangularis sterni, the internal mammary vessels, and the sternum.

The right surface was decidedly convex and quadrilateral; it lay almost vertically, and was directed toward the right. It included the greater part of the right auricle. Its anterior, posterior, and inferior borders were only slightly rounded, and were, therefore, fairly well defined. At its superior extremity the surface blended with the wall of the superior vena cava, and at its posterior inferior angle it was related in the same manner to the inferior vena cava. It was separated by the pericardium from the right phrenic nerve, the blood-vessels, the pleura, and the inner surface of the right lung. The left surface was a convex triangular area directed mainly upward and toward the left. It included about half the free surface of the left ventricle, and the left auricular appendix. It presented the proximal extremities of the descending branch of the left coronary artery and the great cardiac vein, the marginal and transverse branches of the same artery, and the posterior cardiac and coronary veins. It was separated by the pericardium from the left phrenic nerve and blood-vessels, the left pleura, and the surface of the left lung. The posterior (dorsal) surface was called the base in text-book descriptions. It was four-sided, rather narrower above than below, and was convex, and directed backward. It was formed by the left auricle and by the portion of the right auricle which joined the two venæ cavæ behind. It presented the openings of the coronary veins (right and left), the great coronary vein and coronary sinus, and the oblique vein of Marshall, which ran down over the surface to enter the left extremity of the coronary sinus. It was only partially invested by the serous layer of the pericardium—it was separated by the pericardium from the bronchi, the œsophagus,

the vagi, the descending aorta, the vena azygos major, and the thoracic duct. The inferior (diaphragmatic) surface was quadrilateral, slightly convex, or almost flat when the ventricle contained blood. It was formed by a small portion of the right auricle, including the opening of the inferior vena cava; the rest of its surface was about equally divided between the right and left ventricles. In addition to the inferior caval opening, it presented the inferior extremities of the right (anterior) and left (posterior) intraventricular grooves, with the right coronary artery imbedded in the former and the coronary sinus in the latter. Crossing it diagonally was the inferior interventricular groove, with the descending branch of the anterior or right coronary artery and the middle cardiac vein. The posterior cardiac vein ran along its posterior border. The apex of the pyramid was formed by the aorta, the pulmonary artery, and the superior vena cava. These structures arose from the heart on a level with the upper margin of the third costo-sternal articulation, and extended an inch and a half to the left and an inch to the right of the middle line. The clinical apex was indicated by a point between the fifth and the sixth rib three inches and a half to the left of the middle line. The antero-inferior border might be indicated on the chest wall by an oblique line extending from the clinical apex on the left across and slightly upward to a point an inch to the right of the middle line at the level of the sixth chondro-sternal articulation. Along this line the cardiac blended insensibly with the hepatic dullness. On a level with the fourth chondro-sternal articulation the area of the heart's dullness extended three inches to the left and an inch and three quarters to the right of the middle line.

The author suggested the following changes in cardiac nomenclature in accordance with the foregoing description: As the interventricular grooves were seen to be superior and inferior, the right coronary artery might be called anterior, and its branches respectively infundibular (as at present), right ventricular (now marginal), and inferior interventricular (now descending); the left coronary artery might better be named posterior, and its branches superior interventricular (now transverse).

Practical Histology for Large Classes.—Dr. Charles S. Minot, of Boston, said that allowing students to make their own preparations had been given up entirely, he thought, and the change was an advantageous one. Every student was obliged to make a drawing of each preparation, and the drawing was judged on its accuracy. The geometrical faculty was especially developed. In the second half year they were given practical work, and they then began the study of the embryo. In beginning the work they were given specimens of the liver, the heart, the spleen, etc., instead of beginning with connective tissue, bone, or the like. He found it to be an advantage to teach embryology as a help to anatomy and as offering an explanation of a great many relations that would otherwise be obscure.

Some Novel Methods of Description of the Human Skull.—Dr. Harrison Allen, of Philadelphia, said that his method was to secure a formula for each skull. He began with the supra-orbital ridge, and drew a line between this point and the outer part of the external auditory process. The nasal bone might be divided into three parts—the upper part, or the frontal, the main portion, or the maxillary, and the third part, or the pre-maxillary. In the human skull the third portion was not well defined. The frontal portion was very variable. When one held the bone in such a position as to display it in profile, it was possible to tell the proximal from the distal portion. The latter it was well to call the radix, and the part below that, the salient. Variations in these portions served to identify the individual. In two skulls of Sandwich Islanders which Dr. Allen presented, the one had a well-developed incisor crest, and the other had not. The anterior nasal spine was simply the end of the incisor crest. It had received the name of infantile. He believed that the hard palate had not received the attention which it deserved in its posterior part. In negroes, the middle lacerated foramen was very much narrowed and was frequently closed. The temporal fossa might be divided into two parts, the fronto-temporal and the parieto-temporal. They were distinctly different. The former was very apt to be closed, and was very rarely continuous with the same line as the parieto-temporal. No two skulls showed a similar arrangement. In a study of the temporal bone the remains of a suture was sometimes found between the squamous and the petrous portion. For the lower portion of this suture the name retro-tympanic had been proposed. Speaking of the lacrymal bone, Dr. Allen said that scarcely any portion of it was in advance of the crest. In the North American Indian and in the Sandwich Islander it was apt to be very small.

Observations on the Fossa Capitis Femoris and a Tubercle in the Trochanteric Fossa.—Dr. F. J. Brockway, of New York, presented a paper on this subject. The fossa capitis, he said, which in the human femur was found at the extremity of that bone and gave attachment to the ligamentum teres, presented ordinarily a well-marked depression. In certain of the lower animals this depression did not exist. He had examined nine hundred human femora, of which the pedigree of over four hundred had been known. Moser, said the author, in his article in Schwalbe's *Arbeiten*, had said that only half of the specimens of fossa capitis that he had examined had presented vascular foramina. Dr. Brockway, however, had found that in the nine hundred specimens from adults which he had examined eighty-four per cent. had presented these vascular openings. Twenty-six specimens (2·8 per cent.) had presented no fossa at all, and in five cases there had been a distinct tubercle in place of a fossa for the insertion of the ligamentum teres. In five cases there had been double fossæ occurring on one head. In two cases there had been a combination of a fossa and a separate tubercle on the same head. In thirty-six cases the fœtal condition had persisted—*i. e.*, there had been a fossa and a distinct postero-inferior groove descending nearly to the margin of the articular surface and always pointing toward the line passing up from the lesser trochanter to the inferior border of the neck of the femur. Twenty-eight cases had shown the presence of a fossa and a connected tubercle. The ligamentum teres was not inserted into the whole floor of the fossa, but into its upper half and upper margin. The lower part of the floor was free and the ligamentum teres simply rested upon it. Therefore the vascular foramina were usually confined to the deepest and lowest portions of the fossa. The synovial membrane had a more extensive insertion than the ligament proper. The author described three types of the fossa—the oval, the triangular, and the round. They were all practically the same, whether they contained vascular foramina or not. The commonest type of all was the oval (forty-five per cent.); the next commonest the triangular (thirty-four per cent.). Old persons were apt to have shallow fossæ, but their foramina were not more apt to be absent than in younger adults. Out of twenty-two persons over sixty years of age, thirteen had had shallow fossæ. The foramina and fossæ were not symmetrical on both sides. Out of the nine hundred bones examined, only four could be called "pilastred." Twenty-eight specimens had shown a good third

trochanter (three per cent.), not counting an exaggerated gluteal line. Six of these had shown also a tubercle in a digital fossa. From a study of these specimens the linea quadrati would seem to be a myth, as Dr. Brockway had never seen it as a distinct line representing the full length of attachment for the quadratus femoris.

SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL.

Meeting of February 5, 1896.

The President, Dr. PARKER SYMS, in the Chair.

(*Concluded from page 424.*)

Suprapubic Cystotomy for Stone, with a Report of Two Cases.—Dr. A. B. JOHNSON read a paper with this title. (See page 445.)

Dr. L. BOLTON BANGS said that he desired to congratulate the author on the presentation of the subject in his paper. Questions of technics were especially involved in this paper, and it was also worthy of note that there had been but one death in fifteen operations. He had himself done suprapubic cystotomies with the patient in the supine posture and in the Trendelenburg posture, and he varied his practice in this respect with the individual case. In a case of tumor it seemed to him better to use a rectal bag, and perhaps the Trendelenburg posture with it, because in this way the bladder was brought better into view. For the removal of stone by suprapubic cystotomy, when it was the requirement in an old man, rapidity of operation was an essential feature because of the danger of prolonged anæsthesia in such patients. Ordinarily only one instrument was necessary, the bladder was reached and opened rapidly, and the stone could be extracted in a very few minutes. The mode of after-treatment depended very much upon the condition of the bladder itself. Where its condition was what might be termed "bad," prolonged drainage would be required. In his practice of late years he had not sewed up the bladder, although he had partially sewed up the tissues over the bladder. He usually employed a siphon drain, together with the usual antiseptic dressings and measures. Where there was no shock or other contraindication, it was his aim to get the patient up on or about the sixth day, because the pressure of the abdominal contents hastened the healing, and enabled the urethra to resume its functions. He encouraged the action of the urethra by introducing a sound from time to time, and also facilitated healing of the wound by passing a catheter through the urethra each day; sometimes he allowed the catheter to remain in the bladder for a few hours. Before the establishment of natural urination by the urethra, there was a condition of discomfort to the patient, which could be obviated only by careful watching, and the frequent use of absorbent cotton to keep the parts clean. As nearly as he could recollect, the average time of healing in his cases had been about four weeks. Where rapidity of operation was demanded, he had rarely resorted to perineal drainage—only, in fact, in those cases in which it was expected that prolonged drainage would be required. Where the drainage could be secured from a dependent position, of course, this must be looked upon as better surgery, provided there was no such contraindication as the age of the patient.

Dr. S. ALEXANDER said that the mortality rate in the operations reported in the paper was exceedingly good. The statistics of Dittel showed twenty-six operations with fifteen deaths. This was a good illustration of the advance made in this operation by aseptic surgery. It had been shown that a very long time elapsed before the suprapubic wound healed, in spite of perineal drainage, and he was coming more and more to believe in the immediate closure of the bladder, and the use of perineal drainage. The only contraindication to this was where there was marked interstitial cystitis. A series of catgut sutures should be arranged so as to close the bladder wall without involving the mucous membrane. Outside of this should be a layer of Lembert sutures of silk placed close together. The bladder should then be filled and, if any leakage occurred, other sutures could be introduced. This method had worked very well in his hands. The sutures to close the abdominal wall he inserted at the time of the operation, but did not tie them until the end of the second day. He then did a *boutonnière* operation in the perinæum, inserted a tube, and drained through this. In his recent cases, the suprapubic wound had closed throughout by primary union without any infection whatever. The length of time the perineal tube should remain depended upon the character of the cystitis. Ordinarily, it should not be retained longer than the sixth or tenth day. As to the applicability of suprapubic cystotomy as compared with litholapaxy, the speaker said this could only be discussed by a consideration of the ages of the patients. Statistics on this point were exceedingly misleading. The Indian statistics of suprapubic cystotomy showed a wonderful record, which could not be equaled either in this country or in England, and he believed it was due to a special tolerant condition of the bladder of those operated upon in India. Another most important factor was the experience and skill of the operator. This seemed to him more important than the condition of the patient in the operation of litholapaxy. In his own first three cases of litholapaxy the patients had died, yet out of twenty-eight cases of litholapaxy since 1889 he had lost only two patients from the operation. One of these had died on the table from the ether, owing to general disease of the heart. His preference for the high operation was in older men, especially those suffering from prostatic disease.

Dr. EUGENE FULLER said that the results presented in the paper were certainly good, but we should not lose sight of the other methods of treating stone in the bladder. He thought that in quite a percentage of cases the Bigelow operation would have brought about a smoother and more rapid recovery. However, in this country, where stone operations were not very numerous, it was hard for a general surgeon to acquire the necessary skill and experience to successfully perform litholapaxy. In some of the cases reported, in which the prostate was small, there seemed to be no occasion for suprapubic cystotomy, and median lithotomy would probably have been a better operation. Where the prostate was large, of course, the perineal operation was not appropriate, and often the Bigelow operation was not a desirable one on account of the danger of leaving a fragment of stone. By the suprapubic operation, in such instances, the patient could and should be relieved, not only of the stone, but also of the enlarged prostate. He did not think the statistics of the suprapubic operation would ever become as good as that of litholapaxy in skilled hands. He hardly thought it was fair to ascribe the wonderful statistics of India to a peculiar tolerance of the bladders; it was rather to be attributed to the great skill and enormous experience of the surgeons there. It was extremely important in the suprapubic operation to suture the bladder carefully to the abdominal wall, and to do the operation rapidly. Recent English statistics showed a large mortality in young subjects from the suprapubic operation. In England it was the custom to leave the wound open. On the other hand, some very excellent statistics had just been reported by Rasumovsky, a Russian observer, in which the

bladder had been tightly sutured in children without even tying in a catheter. If the bladder were firmly sutured, he believed that, owing to the comparative immobility of the tissues, there was very much less danger of sepsis.

Book Notices.

The Pathology and Treatment of Venereal Diseases. By Robert W. Taylor, M. D., Clinical Professor of Venereal Diseases at the College of Physicians and Surgeons (Columbia College), New York; Surgeon to Bellevue Hospital, and Consulting Surgeon to the City (Charity) Hospital, New York. With Two Hundred and Thirty Illustrations and Seven Colored Plates. Philadelphia: Lea Brothers & Co., 1895.

This admirable work is well worthy to be classed among the standard text-books of medicine. It is not always easy for the practitioner to determine on first sight whether a medical treatise should be accepted as standard or not. His task would be easier were the making of the treatises always intrusted to standard men, to the experienced teachers and the acknowledged masters in the profession. The result would be that fewer errors would be committed in practice, and the practitioner would have less rubbish to weed out of his library.

Unfortunately, there is a creed among aspirants for medical fame, and especially among the specialists, that to have a lucrative reputation one must first write a book. So, as things generally go, the aspiring specialist first writes his book and learns his specialty afterward. By the time he has learned it and is competent to teach it to others he has become content with the emoluments his reputation has brought him, his literary activity measurably ceases, and the book-making still remains with the tyros. Not always, fortunately, and we may congratulate ourselves that in Professor Taylor's work we have one of the notable exceptions.

The work is admirable, both in its matter and in the form of its make up, reflecting much credit on the liberality of the publishers as well as on the abilities of the author. It is unequaled by any similar work in the profusion and superior character of its illustrations. The excellence of the matter might be inferred beforehand from the writer's peculiar qualifications for such a task, and these are well known. His experience as a teacher has made him fully aware of the special requirements of a treatise. In the observation and treatment of venereal diseases his experience has been greater, probably, than that of any other practitioner of this continent. As a student, a catholic spirit of inquiry has kept him well abreast of the general movement and progress in his department, enabling him to present what is best in the work of others with discrimination and a matured judgment. Facts are fully and fairly stated, and opinions on mooted points, though delivered at times somewhat magisterially, are reasonably impartial. Dogmatism is perhaps as much the prerogative of authority as its besetting vice, but Dr. Taylor avails himself of his privilege very sparingly, and in various expressions clearly intimates that he is aware of the dangerous tendency and is anxious to avoid it. Considering his title to speak authoritatively, together with the general fact that one who holds strong and fixed opinions always finds it difficult to present both sides of a question with absolute impartiality, there is perhaps less tendency in his book to dogmatize than one might expect.

Sometimes it happens that in running atilt against a real or fancied dogma one lands in another on the other side. Is it not just possible that Taylor and other modern writers, in assailing the doctrine or dogma of duality of the venereal viruses, when they strenuously assert that there is no such thing as a specific chancrous (or chancroidal) virus, have gone a bit too far? It looks a little like dogmatic negation while so many good men hold an opposite view. Inoculability in generations is not the only test of the non-syphilitic venereal sore, and the fact that inoculable sores may be produced on the genitals with pus from a great variety of sources does not prove that there is not an independent chancrous disease aside from syphilis which has its sole origin in a virus that is always derived from the products of the same disease elsewhere. And the question is not settled by the fact that no specific germ has yet been sufficiently identified. Before Neisser demonstrated the gonococcus of gonorrhœa there was the same reason for denying the existence of a specific urethritis as there is now for denying that there is a specific non-syphilitic venereal ulcer, or, as we Americans commonly call it, "chancroid."

The name chancroid as used here carries with it the implication that there is no chancre except the syphilitic chancre. The inoculable sores of the genitals that are not syphilitic are a hybrid genus arising from septic causes of indefinite variety, and do not constitute any one and independent form of disease. They resemble the ulcerating form of the syphilitic initial lesion—the true chancre—and so are distinguished simply as chancrelike sores—*i. e.*, chancroids. But what warrant have we for such use of these terms excepting local usage, which, to be sure, is in its way a warrant, but none the less arbitrary? This was certainly not the sense in which Clerc first used the word chancroid. Believing, as he did, that the simple chancre was but a modified form of the syphilitic, or "true," chancre, as varioloid is a modified form of variola, he constructed the term legitimately, and it had a special significance which in the modern acceptation of it it wholly lacks. From the remotest times, a chancre has been known as a contagious, ulcerating, venereal sore, occurring more particularly on the genitals, and the etymology of the word implies the corroding character of the sore. In time it was found that when this eating sore had certain characters it caused syphilis. It is a well-known fact, however, that ulceration is not essential to the initial lesion of syphilis. Indeed, the chief mark of distinction of that from other venereal lesions is its comparative non-inflammatory and non-ulcerative character. In its most typical form it is not an ulcer at all. Hence, were strict regard paid to the etymology and history of the word, chancre should still stand for the simple contagious sore, and the term chancroid would become superfluous. The appropriation of the word chancre as the designation solely of the initial lesion of syphilis is illogical and, furthermore, objectionable because it is peculiar to one country.

The Principles of Bacteriology. A Practical Manual for Students and Physicians. By A. C. Abbott, M. D., First Assistant, Laboratory of Hygiene, University of Pennsylvania, Philadelphia. Third Edition, enlarged and thoroughly revised. With Ninety-eight Illustrations, of which Seventeen are Colored. Philadelphia: Lea Brothers & Co., 1895. Pp. xii–13 to 493.

As stated in the preface, "the call for a third edition of this book, coming so soon after the appearance of the second edition, is a source of no small degree of gratification to the author," and is the best possible proof that the work fulfills its intended object. As a practical compend on the principles of bacteriology, this treatise has no superior among

American works of similar compass, and has accordingly come into very general use as a laboratory manual among students. All that portion of the book that relates to technical procedures is very satisfactorily compiled, and directions are stated with sufficient minuteness to guide any ordinary beginner.

Of special value to the student of bacteriology are the outlines of experiments to be followed in the study of the various species. The chapters on animal experimentation contain descriptions of all the newer apparatus and procedures, and will be found invaluable to any one who is not perfectly familiar with the difficulties of this work. Not only are the needs of the student considered, but the advanced worker will find a very full choice of all the newer staining methods, instruments, and procedures for diagnosis. In the descriptions of several important species many recent additions to our knowledge have been properly incorporated, and these chapters may be considered as giving all that is certainly known on the subjects. Although the author has enlarged his list of the pyogenic bacteria, we do not see that he mentions Prudden's demonstration of the pyogenic properties of the tubercle bacillus, or that he accepts the exhaustive work of Janowski in this field.

The author has not hesitated to attack the subject of immunity, with twenty-five pages at his command, and the result has been a somewhat uneven presentation of evidence, a magnification of some and strange suppression of other facts. The young Klemperers receive a notice of three pages, although the importance of their work can hardly be considered to be an eighth of the whole. On the other hand, we miss in the discussion the names of some master German chemists and bacteriologists whose work has been essential in the progress of this study. Buchner's very important and recent (1894) experiments and the whole of the rebuttal testimony of Metchnikoff and numerous pupils are equally wanting. Whatever may be said of the concluding paragraphs of this chapter, the author has not demonstrated that the subject, as it now stands, can be even summarized successfully in a few pages. Had some of this space been devoted to a fuller description of the bacteria of ordinary suppuration—*e. g.*, the gonococcus—the reputation of the work as a most successful laboratory manual would not have suffered thereby.

A full account of the many valuable features of the book has appeared in connection with earlier editions, and it only remains to repeat unreserved recommendation of the work for the use of all laboratory workers in bacteriology.

A Text-book upon the Pathogenic Bacteria for Students of Medicine and Physicians. By Joseph McFarland, M. D., Demonstrator of Pathological Histology and Lecturer on Bacteriology in the Medical Department of the University of Pennsylvania, etc. With One Hundred and Thirteen Illustrations. Philadelphia: W. B. Saunders, 1896. Pp. 12 to 359. [Price, $2.50.]

In a work of moderate size, the author has succeeded admirably in presenting the essential details of bacteriological technics, together with a judiciously chosen summary of our present knowledge of pathogenic bacteria. As indicated in the preface, the work is intended as an elementary text-book for students of medicine, but Part II, or Specific Diseases and their Bacteria, will readily commend itself to a large class of practitioners who recognize the value of acquaintance with the behavior of the bacterial causes of disease, even without a technical knowledge of bacteriology. It is no unfavorable reflection on the scientific character of the treatise, moreover, to mention the fitness of this second part for the use of non-professional readers who may be interested in the science or in its bearing on matters of vital general interest.

In the introduction the author has sketched briefly but in a sufficiently complete and very interesting way the history of bacteriology. The chapter on Immunity and Susceptibility is a more than usually successful attempt to briefly outline the present status of this very occult study, and in the discussion of the various theories presented the author has not given undue prominence to any of the tenets. It must be said, however, of this, as of all such short reviews of the subject of immunity, that some important and essential evidence has been omitted, such as, in this instance, the studies of Pfeiffer and his assistants and the later work of Metchnikoff and his pupils in answer to various criticisms of the phagocytic theory. Tuberculosis is considered at comparative length, and all the more important relations of this subject have received attention in the practical way best adapted to the class of readers to which the book is addressed.

Elsner's procedure for the isolation of the typhoid bacillus is possibly of too recent appearance to receive notice, although the author's preface is dated February, 1896.

Numerous photographic plates illustrate the text in the description of the various bacterial species. Of these photographs, many are very characteristic, while others (*e. g.*, Fig. 58), as frequently results with this process, can hardly be said to add much to the verbal description. The author has adhered with considerable uniformity to an easy and correct style of diction, which is so often lacking in the treatment of very technical subjects. The work, we think, should have a wide circulation among English-speaking students of medicine.

Elementary Technique in Histology and Bacteriology. By Ernest B. Hoag, A. B., B. S., Instructor in Zoology and Physiology, Throop Polytechnic Institute, Pasadena, Cal., and H. Kahn, Phar. M. Mich., Assistant Demonstrator in Bacteriology, Northwestern University School, Chicago. Chicago: E. H. Colegrove & Co., 1895. Pp. 130. [Price, $1.]

In this work, intended as a guide in elementary technics for the use of medical and other students beginning work in histology or bacteriology, the authors have outlined as concisely as possible the procedures usually taught to students of these branches. It will be found a portable laboratory manual, sufficiently complete for ordinary work, but not intended as a text-book or reference-book on the subjects treated. A commendable feature, especially valuable for beginners, is the recommendation of a single reliable method in the preparation of many of the tissues for histological study.

The Diseases of Children's Teeth; their Prevention and Treatment. A Manual for Medical Practitioners and Students By R. Denison Pedley, M. R. C. S., L. D. S. Eng., F. R. C. S. Edin., Dental Surgeon to the Evelina Hospital for Sick Children, Southwark, London. With Numerous Illustrations. London: J. P. Segg & Co. Philadelphia: S. S. White Dental Manufacturing Co., 1895. Pp. xi–268.

The absurd prejudice which so long rated the surgeon as a barber and leech and the dentist as a mere extractor of teeth seems to have persisted to some extent, for to this day no effort is made in our medical schools to teach the student even the most superficial smattering of knowledge concerning the surgery of the teeth. Standing as they do at the portal of the digestive system, it would be strange indeed if their condition, good or ill, did not have a portentous influence upon the subsequent performance of the digestive functions. We welcome, therefore, this little book which in simple words

and attractive typography leads us easily to a sufficiently comprehensive knowledge of this neglected field. It is not to be supposed that after reading it every physician will undertake to do his own dental work, but an intelligent knowledge of the principles involved will enable him, as the family physician, to be a conservative advisor, and he may often suggest consultation with the dental surgeon early enough to avoid much preventable discomfort or suffering. He may be of special benefit by his supervision of the oral hygiene of the child, to which an excellent chapter of this work is devoted. Children's faces are daily scrubbed into a condition of shining cleanliness, while their teeth are allowed to decay, or remain clogged with decomposing particles of food, or discolored by adherent tartar. Such things the physician may prevent. The connection between carious teeth and other diseases is well pointed out by the author, and instances are given of chorea and epilepsy which disappeared promptly after removal of the continuous source of irritation. The connection between caries and the different forms of stomatitis is self-evident, and, while that of other diseases of the digestive tract—diarrhœa, indigestion, and dyspepsia—may not be so obvious, the constant presence of a putrid nidus in the mouth for the development of swarms of micro-organisms, with the production of toxines and the possible accompaniment of pus, is very suggestive. Every one has seen glandular swellings and abscesses directly due to bad teeth. It is certainly plausible to suppose that anything which favors the growth of pyogenic bacteria in the mouth may have a malign influence upon the development of inflammatory processes in the lungs. We note with pleasure that a strong protest is made by the author against the household practice of poulticing the face in cases of alveolar abscess, a procedure which so frequently results in unnecessary and permanent scarring of the cheek. The reviewer gladly acknowledges that his horizon has been perceptibly widened by the perusal of this book, and his one adverse criticism is that the English hospital formulæ used in the treatment of cases cited are referred to only by name and have not been given in full in the American edition.

BOOKS, ETC., RECEIVED.

Voice Building and Tone Placing. Showing a New Method of Relieving Injured Vocal Cords by Tone Exercises. By H. Holbrook Curtis, Ph. B., M. D., Fellow of the New York Academy of Medicine, etc. New York: D. Appleton & Company, 1896. Pp. xii–215. [Price, $2.]

Uric Acid as a Factor in the Causation of Disease. A Contribution to the Pathology of High Arterial Tension, Headache, Epilepsy, Mental Depression, Paroxysmal Hæmoglobinuria and Anæmia, Bright's Disease, Diabetes, Gout, Rheumatism, and other Disorders. By Alexander Haig, M. A., M. D. Oxon., F. R. C. P., Physician to the Metropolitan Hospital and the Royal Hospital for Children and Women, etc. Third Edition. With Fifty-four Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1896. Pp. xv–600. [Price, $3.]

New Truths in Ophthalmology, as Developed by G. C. Savage, M. D., Professor of Ophthalmology in the Medical Department of the Vanderbilt University, etc. Fifty-eight Illustrations. Third Edition. Published by the Author, 1896. Pp. viii–270.

Consumption: Its Nature, Causes, and Prevention. With an Outline of the Principles of Treatment. For all Classes of Readers. By Edward Playter, M. D., Member of the Canadian Medical Association, etc. Toronto: William Briggs, 1895. Pp. viii–9 to 343. [Price, $1.50.]

Eleventh Annual Report of the Adirondack Cottage Sanitarium, Saranac Lake, N. Y. November, 1895.

Tenth and Eleventh Annual Reports of the Bureau of Animal Industry, for the Years 1893 and 1894. [United States Department of Agriculture.]

Twenty-sixth Annual Report of the Massachusetts Homœopathic Hospital, and of the Ladies' Aid Association, for the Year ending December 31, 1895.

The Fourth Annual Report of the Sheppard Asylum, Baltimore, Md., 1896.

The Thirty-seventh Annual Report of the Buffalo General Hospital, for the Year 1895.

On the Distribution of Assimilated Iron Compounds other than Hæmoglobin and Hæmatins in Animal and Vegetable Cells. By A. B. Macallum, M. B., Ph. D., of Toronto. [Reprinted from the *Quarterly Journal of Microscopical Science.*]

Mixed Forms of Trachoma and Spring Catarrh. By Charles H. May, M. D. [Reprinted from the *Annals of Ophthalmology and Otology.*]

Neuro-social Data. By Dr. Arthur McDonald, of Washington. [Reprinted from the *Psychological Review.*]

Clinical Remarks on the Division of the Vas Deferens in Cases of Obstructive Prostatic Hypertrophy. By Reginald Harrison, of England. [Reprinted from the *Lancet*]

The Earth not Created. By D. K. Tenney, of Chicago.

Liberalized Christianity. By Henry M. Taber, of Chicago.

Amputation of the Entire Upper Extremity (including the Clavicle and Scapula) for Sarcoma following Fracture of the Clavicle. By W. W. Keen, M. D. (Read before the Philadelphia Academy of Surgery.)

The Sanitation of Rochester. By George W. Goler, M. D., Chief of the Bureau of Contagious Diseases, Rochester Health Department.

Remarks on Operations on the Gasserian Ganglion, with a Report of Five Additional Cases. By W. W. Keen, M. D. [Reprinted from the *American Journal of the Medical Sciences.*]

Miscellany.

The Winter Climate of Egypt.—Dr. C. Theodore Williams, writing on this subject in the *British Medical Journal* for March 14th, says that the climate of the desert has, according to modern views, strong claims on our attention, because it combines with great dryness moderate warmth and remarkable aseptic qualities. The desert climate best adapted to invalids is, he thinks, that of Egypt, because of its accessibility and the comfort and the luxuries which the Nile services supply. Dr. Williams took the opportunity of investigating certain points of climatic importance to patients during a recent visit to that country, and ascertained how far the advantages of desert air could be made use of for treatment.

With regard to the mists, he says, on which so much stress is laid by visitors, they are only the natural result of surrounding conditions. The Nile overflows, and irrigation distributes this flood over as large a surface as possible. The Nile then slowly and gradually sinks to a low level, and the sun's rays, which are almost tropical, cause rapid evaporation, forming mists which are generally dissipated on reaching the desert. Nevertheless, he says, with all this ground moisture, it can not be said that Cairo and Lower Egypt have a moist climate, for its average relative humidity percentage is only 58·4, its rainfall is only 1·22 inch, and the number of days on which rain falls is not more than fifteen. The rate of evaporation is seven inches a month.

Luxor and Assouan, says Dr. Williams, are the only rest-

ing places fit for invalids on the Upper Nile, and during the months of December, January, February, and March they offer distinct climatic advantages. Luxor has three excellent hotels and two experienced English physicians, Dr. Leigh Canney and Mr. Longmore.

Dr. Canney, he says, has made many meteorological observations with instruments of great accuracy, and the following figures were taken from his records: During the winter months there is a day temperature of from 60° to 80° F., and a fall at night of about 30°. The daily rise begins about 6 A.M., and the maximum is reached at 2 P.M., which in winter is from 75° to 85° F. After this the fall begins, but it is a gradual one, and even immediately after sunset it is not as rapid as might be supposed by one's sensations, for five degrees is about the greatest lowering within an hour after sunset. The fall continues until 4 or 5 A.M.; the minimum in January, 1896, was 40° F.

The humidity percentage is very low in the daytime—namely, from thirty to forty per cent.—but at night it rises to eighty and even ninety per cent., and the presence of this extraordinary amount of nocturnal moisture is shown by the acacia trees, which drip in the early morning.

The temperature and humidity curves on the recording instruments, says Dr. Williams, are the most uniform he has ever seen, the rise and fall always taking place at the same hours, the columns only apparently varying in height according to the wind. A north wind depresses both temperature and humidity columns, and a southerly one causes them to rise, but under either condition the form of the curve and the difference of thirty degrees between the extremes of temperature appears to be maintained.

Assouan, says the author, lies over a hundred miles south of Luxor, and it is situated under very different conditions. It is placed high above the Nile mark and it is not affected by the inundation. It is surrounded with palm groves and acacias, and has an excellent hotel. The meteorological observations made by Dr. Jalland, the resident physician, show that the general temperature course is the same as that of Luxor. The climate of Assouan is warmer and drier than that of Luxor, but it is somewhat more windy, and this imparts a freshness which is very agreeable, although the north wind is at times very trying, especially after great heat. South of Assouan, he says, the climate of the Nile Valley is very fine, and it is under the more complete influence of the desert.

With regard to the Nile boats and their suitability for invalids, says Dr. Williams, they are floating hotels, furnished with hot and cold baths, electric light, convenient cabins, an obliging staff, medical attendance, and first-rate food, and providing delightful excursions day by day, which are only too tempting and fatiguing for invalids.

The post boats, though smaller, are hardly less comfortable, and have the advantage of enabling their passengers to see more of the Nile traffic and native life, though they do not stop at all the temples or ruins, and make the voyage more speedily.

Perhaps the most suitable for patients, he says, are the dahabiyehs, as they make the ascent of the river in a leisurely way, sailing with the wind or being towed (by steam tugs if desired), and halting when and where they please, because they are not tied to time, but can linger where the passengers find the most attractions. They are usually well supplied with food, but complaints are made of the draughts; and as this mode of conveyance is very costly, it is out of the reach of a large number of invalids.

In a climate characterized by powerful sunshine and great nocturnal radiation, says Dr. Williams, there must always be difficulty in protecting patients, and especially pulmonary patients, from extremes of temperature, even when they are lodged in tolerably well-constructed houses; but this difficulty is largely augmented if, for the house, a wooden or iron steamer is substituted, the upper and lower decks containing the cabins, the walls of which are thin and the passages draughty. On a warm, still day the progress of the ship provides a breeze which is pleasant to every one, but when the prevalent north wind blows, and especially on descending the Nile, when the steamer faces the wind, the blast is keen and productive of serious effects on delicate people. The effects of radiation after sunset are decided; for Dr. Marcet's valuable observations on a Nile boat show a fall of from 12° to 15° between 6 P.M. and 9 P.M.; but they also indicate that some accessions of heat take place from the neighboring overheated desert air condensing over the cooler Nile stream.

The Nile itself is far more equable in temperature than its banks, and, though it flows from tropical regions, it is cool and condenses much of the moisture arising from its highly cultivated and irrigated shores.

The cases in which the Nile voyage is most beneficial are those of overworked brain, showing itself in nerve exhaustion. The easy movement of the vessel, the beautiful scenes, the novelty of the native life and habits, and the archæological wonders, in a fine climate, exercise a healthful influence on an overwrought mind, and soon restore the sufferer to comparative health.

Probably in most cases the health stations of Luxor and Assouan are preferable to life on the Nile boats, as here in good hotels, protected from cold winds and the effects of nocturnal radiation, the patient enjoys the splendid climate, and has ample facilities for exercise, while he is kept under medical supervision.

It is curious, says the author, that there is little or no malaria in Egypt, except in the Delta, when we consider that the basements of many houses near the Nile are under water for one or two months every year, and that as the waters retire they leave a vast surface of mud, which, under the rays of a semitropical sun, exhales moisture on a large scale and appears to present conditions favorable to the development of miasmatic organisms.

The principal diseases are ophthalmia, dysentery, liver affections, and parasitic disease. Occasionally there are visitations of cholera, but the drying up of the Nile inundation does not seem to be accompanied by any special outbreak of disease among the inhabitants. At the same time, it is well for patients to avoid this period, and not to arrive in Egypt till the end of November or the beginning of December, and then the sooner they reach the desert the better. For we medical men, he adds, look to the pure aseptic desert air as most likely to benefit our patients, and reflect with a touch of melancholy that the justifiable aim of modern civilization and scientific improvements is to thrust the desert as far back as possible from that great pathway of North Africa, the Nile, so that as Egypt increases in fertility and riches it will become less eligible as a health resort.

Pental and its Administration.—At a recent meeting of the Society of Anæsthetists, a report of which is published in the *Lancet* for March 14th, Dr. Prince Stallard read a paper on this subject. Pental, he said, was a clear, mobile, colorless liquid, having no marked taste, but producing a slight burning sensation when it was placed on the tongue, and a slight irritation at the back of the throat, which, however, soon disappeared. It was exceedingly volatile and highly inflammable; it had no escharotic action when dropped on the

skin, and its smell was somewhat pungent, but not disagreeable, as patients never complained of its odor. At the ordinary temperature of the room it was so volatile that it was necessary to administer it by the closed method, with the admission of as little air as possible. If exhibited on a piece of lint, as was usual with chloroform, a large quantity of the drug was required. In a hundred and forty-eight cases Clover's portable ether inhaler had been used. Two drachms of pental were poured into the reservoir, the indicator placed at O, and the patient encouraged to fill the small bag with his expirations; the indicator was then turned rapidly but evenly to 3; rarely was it necessary to turn to F. Pental was thus given more rapidly than was advisable with ether, and attention had been directed to the absence of coughing, struggling, and fighting for breath, so characteristic of the latter drug when given alone without the previous exhibition of nitrous oxide gas. No restriction had been placed on the patients with regard to diet, and in only one case had there been after-vomiting. The clothing should be quite loose around the throat and abdomen so that the thoracic and abdominal movements could be quite free. All the administrations had taken place at about 10 A. M. In all the cases the patients had been seated in a dental chair, the head having been placed in an easy position midway between flexion and hyperextension. The horizontal position, said Dr. Stallard, would be much safer, as signs of cardiac failure had not infrequently occurred in the cases quoted, pental, in this respect, resembling chloroform. When this drug was inhaled the pulse was at first quickened, and likewise the breathing, and then the pulse became fuller and bounding, with dilatation of the capillaries of the face, which was evinced by extreme flushing, similar to that observed when nitrite of amyl was inhaled; swallowing movements were observed, but never any coughing or struggling; screaming might occur, and dreams of a pleasant nature were frequently experienced. Spasms, tonic and clonic, were occasionally present in the arms or in the legs. The lid reflex was usually present unless the anæsthesia was deep; when the patient was deeply under the influence of the drug the pupils were dilated and the eyeballs turned upward under the upper lids, and, in some cases, the conjunctival vessels were prominent and congested; the arm when raised dropped helplessly to the side. At the height of anæsthesia the pulse became small, and might be running. There was no cyanosis or duskiness of the features, and stertor was very rare. Micturition and defæcation had never been observed. Opisthotonos and twitchings of muscles had been noted in a few cases, the patients having generally been tranquil. The breathing could hardly be heard, and this, said the author, constituted one of the dangers, and, in this respect, pental again resembled chloroform. Recovery was extremely rapid, and was not followed by any stupor or drowsiness. As a rule, there were no after-effects, and the patients felt quite well three minutes after the removal of the face-piece, and were able to walk out of the house. One case only of vomiting had occurred and three or four of nausea; slight headache had been noted in a few cases, but this had rapidly passed off. The average time required to produce anæsthesia had been fifty-six seconds, and the average anæsthesia obtained had lasted for seventy-six seconds. The pre-anæsthetic stage had varied from thirty to one hundred and twenty seconds and the anæsthetic period from twenty-five to two hundred and ten seconds. The advantages maintained for pental, said Dr. Stallard, were: 1. Longer anæsthesia than nitrous oxide gas yielded. 2. Simple apparatus. 3. No struggling, coughing, or dislike to the drug. 4. The small amount required, which averaged two drachms. 5. Rapid recovery. 6. The absence of after-effects. The disadvantages were 1. The insidiousness of its action—an overdose could easily be administered. 2. Noiseless and shallow breathing. 3. Screaming. 4. The sudden cessation of respiration. 5. Sudden cardiac failure.

Dr. Dudley Buxton, speaking of the mortality following the administration of pental, said that Dr. Stallard had given one case out of a hundred and forty-nine, but he doubted whether it had really been due to pental. Gurlt had given three deaths in six hundred administrations, and Snow had given two in two hundred and thirty-eight cases. One of the difficulties in working with amylene and pental, he said, was the presence of impurities. Before we could accuse pental of causing deaths we must be sure it was pure pental and no some mixture of drugs simulating it. In all probability much of the pental at present supplied was impure. One German observer had found albuminuria and hæmoglobinuria occurring in many cases within three or four days after the administration. Pental, so far as we knew at present, was a most useful drug, but it possibly and probably possessed grave disadvantages from its tendency to affect respiration, perhaps through spasm of the glottis and of the diaphragm. In the cases of death it was to be noted that these had arisen from failure of respiration, while the heart had continued to beat for some minutes afterward. A marked injustice might easily be done to any new anæsthetic if, because cases of death had occurred in the early days of its administration, its use was therefore discarded.

Mr. Joseph White said that forty years ago he had used amylene extensively, principally for the extraction of teeth, and had found it a charming anæsthetic, quick in its action, with no after-effects, and liked by the patients. When it had been used for longer operations he soon found that alarming symptoms had been very apt to arise, and feeble respiration and circulation had occurred very suddenly, so that he had discarded the drug, as he did not consider it as safe as chloroform.

Dr. Silk was struck with the similarity of the remarks of Dr. Stallard's cases with those he had himself published as occurring when bromide of ethyl was administered, and given the change of name in the two records of cases observed it would be difficult to distinguish the one from the other. He had noticed that with bromide of ethyl decomposition always occurred sooner or later when the bottle had once been opened, and as the clinical symptoms appear so similar he would ask Dr. Stallard whether he had found any evidence of decomposition occurring with pental. He was of opinion that patients should not be in the dental chair but recumbent during the inhalation of pental, as vascular depression so frequently occurred.

Dr. Augustus Cook said he had been administering pental during the last four or five years; all his cases had been fairly long ones, some of half-an-hour's extent, but his patients were invariably in the recumbent position. The main advantage of pental was the absence of after-effects; it might even be administered on a full stomach without fear of causing vomiting. The open method was employed in all the cases.

Dr. Dudley Buxton asked if Dr. Stallard could explain why in these recorded cases one would give an anæsthesia of ninety seconds, another of twenty-five seconds, and another of as much as two hundred and ten seconds.

Dr. Stallard said that he had frequently noticed decomposition of the drug to occur. With regard to albuminuria, he had examined twenty-five cases after administration and found no albumin, but it must be remembered that all his cases had been short ones and its effect would not be long

enough to injure the kidney. The fall of blood-pressure was marked. With regard to the length of anæsthesia obtained, he was of opinion that there was a marked personal factor in many cases.

Charcoal as a Therapeutic Agent.—In the March number of the *Medical Chronicle* Dr. Robert B. Wild publishes a prize essay on this subject in which he remarks that of recent years charcoal has almost ceased to be regarded as an active therapeutic agent, although some physicians still prescribe it largely, and they are convinced that they have obtained good results from its administration. He has used it, he says, with benefit in a number of cases, both internally in digestive disorders and in diarrhœa, and as an external application in cancerous ulcerations. For this reason it has seemed to him that the subject was worthy of a fuller investigation, and this investigation and its results he presents under the following heads: A summary of what appears to be definitely known in regard to the action of vegetable charcoal; a description of the experiments performed by himself and the results obtained from them; the conclusions which he has formed in regard to the action and uses of charcoal.

Concerning the latter, he says that Stenhouse's contention that charcoal is not an antiseptic is in entire accordance with the result of his experiments, so far as regards putrefactive organisms; instead of retarding, charcoal hastened decomposition. Neither was charcoal found to be a disinfectant in the modern sense of the word, though undoubtedly an oxidizer and decomposer of organic chemical substances, which was what Stenhouse understood by that term. It seems desirable, he says, that the text-books of materia medica should be worded so as to avoid the use of the term disinfectant as applied to charcoal, since that term is now generally understood in a different sense.

Dry charcoal, as is well known, acts as a filter for noxious gases, absorbing them and oxidizing them. After a time this power is lost, and the charcoal becomes saturated; probably this occurs when all the oxygen contained in its pores is exhausted and replaced by the gaseous products of decomposition.

Dr. Wild thinks that too much stress has been laid upon this property of charcoal in explaining its use as a therapeutic agent, and too little stress upon its power of oxidizing organic matter in solution, or even in the solid state; the result has been, he says, that charcoal is discredited—perhaps unduly—as an internal remedy, because of the impossibility of preventing it from becoming wet during, or shortly after, its administration. That this oxidizing action is thoroughly carried on by wet charcoal is, he believes, shown by his experiments; and that this is more than a mere absorption of the gaseous products is, he thinks, proved by the fact that the putrefying fluid once deodorized by the charcoal mixed with it, did not afterward undergo any further putrefaction; whereas the putrefaction continued unchecked when the charcoal was placed so as merely to act as a filter for the gases given off, and not in actual contact with the test solution. The change that occurred in the character of the test solution after mixing with charcoal was also significant; no such change took place unless the charcoal was in actual contact with the putrefying fluid.

The degree of deodorization and oxidation produced by charcoal was proportional to the amount of charcoal used, and was therefore less likely to be due to a simple catalytic action than to something actually contained in the charcoal, and which was used up in the chemical processes involved in its activity. This something, says Dr. Wild, appears to be most probably oxygen condensed within the pores, and the important point is that it is apparently not removed by thoroughly rubbing the powdered charcoal with water.

We have apparently in charcoal—whether dry or mixed with water—a powerful oxidizing agent, and one which, being non-poisonous, can be administered in large doses.

With regard to the manner in which the oxidation of nitrogenous organic substances is effected, he says, we have no certain information, but bacteriological researches have shown that "decomposition of organic substances must be looked upon as including two distinct processes; one variety is caused by those microbes which thrive in the absence of oxygen, whereas the other is essentially a process of oxidation set up by aerobic micro-organisms. In the latter, highly complex combinations are reduced to the very simplest, as happens with the manure used in agriculture; and this can take place only when oxygen has free access, and in the presence of the proper amount of water. When there is too much water, the necessary quantity of oxygen can not gain admission, and the process reverts to the anaerobic form" (Schenk, *Manual of Bacteriology*, translated by Dawson, 1893, p. 173).

In accordance with this view, the author continues, it appears highly probable that charcoal added to a decomposing fluid supplies the oxygen required to convert the anaerobic process of decomposition into the aerobic one, and so hastens the reduction of the organic compounds to their simplest elements. When there is a comparatively large quantity of water, the deeper parts of the decomposing fluid are almost, if not quite, anaerobic, and the peculiarly porous nature of the charcoal may well serve, when mixed with the fluid, to introduce oxygen into all portions of it, and so enable the aerobic process to go on throughout its whole extent, instead of only on the surface exposed to the air.

The process of putrefaction of albuminous substances which takes place within the alimentary canal is chiefly, if not entirely, of an anaerobic character, and therefore the complete oxidation of the decomposing substances does not occur, but various intermediate products are formed; many of these are offensive, and some are toxic. Hoppe-Seyler, he says, has shown that if bacteria in an albuminous liquid are well supplied with oxygen, products like indol, hydroparacuminic acid, and sulphureted hydrogen (which are largely formed when oxygen is wanting), entirely disappear. May it not be, he asks, that the good effects, clinically observed from the administration of charcoal in certain diseased conditions of the alimentary canal, are due to the substitution of the aerobic process of decomposition for the anaerobic, and the formation of harmless and inoffensive simpler chemical compounds in place of the offensive and toxic intermediate substances resulting from the anaerobic process?

If this is a correct hypothesis, the importance of the fact that charcoal has no direct injurious effect upon the micro-organisms themselves is at once apparent, since the decomposition of the chemical substances is the work of these organisms, or of something produced by their metabolism, the charcoal only supplying the oxygen necessary for the partial or complete substitution of the aerobic for the anaerobic process.

It is not difficult to see, he says, how on this view a comparatively small quantity of oxygen may produce a distinct effect as a remedial agent; for even a very partial change from the anaerobic to the aerobic process of decomposition might reduce the formation of intermediate products to a quantity which could be adequately dealt with by the tissues and organs of the animal body.

This aerobic process of decomposition may well be compared with what takes place in the soil. The organic vege-

table or animal matter in the soil is broken up by the bacteria and oxygen during the progress of nitrification, the complex organic substances being reduced to their simplest compounds. It is interesting to note in this connection, says the author, the fact that in his experiments the mixture of charcoal and putrefying fluid gave, after some time had elapsed, the characteristic smell of freshly turned earth.

With regard to the uses of charcoal, he says, it may be used externally as a local application to foul ulcers, or mixed with water for an injection into the rectum or vagina in cancer, or in other ulcerative disease of those cavities. In certain cases much benefit has resulted from its use, especially with respect to the diminution of smell, which so often renders this class of patients difficult to treat, either in a hospital ward or in a small room. It is, however, a very dirty application if used in sufficient quantity, and for ordinary cases our present antiseptic drugs are more cleanly and more effectual, and are not likely to be superseded by charcoal.

It may be used internally in cases where there is undue decomposition of the contents of the alimentary canal, such as dilatation of the stomach, certain forms of gastric indigestion, intestinal indigestion, and other conditions where the alimentary canal contains abnormal toxic substances. Also in certain specific diseases presenting local lesions of the alimentary canal. We know, says Dr. Wild, that many of these, such as cholera, typhoid fever, dysentery, and certain forms of diarrhœa, are due to living organisms, and of recent years the view is more and more gaining ground that many of the symptoms in these cases are due, not so much to the living organisms, as to the formation of various toxic substances—*e. g.*, the typho-toxine of Brieger and Fraenkel—which exert an injurious action upon the alimentary canal, or by their absorption from it produce a more general intoxication.

For the treatment of these diseases the use of intestinal antiseptics is increasing, and good results have been frequently reported. The disadvantages of this mode of treatment are, firstly, the small doses of the antiseptic drugs which can be safely administered; secondly, the difficulty in insuring their arrival at the required part of the alimentary canal.

Charcoal, he thinks, appears worthy of further trial in these classes of cases, for, although devoid of antiseptic properties, it may act by oxidizing the chemical substances formed during abnormal decomposition, or the various toxines produced by pathogenic organisms. This action, he says, may be a direct one, or indirectly through the aerobic process of putrefaction, and it is possible that a supply of oxygen may modify the metabolic processes of the pathogenic organisms themselves, and render them or their products less virulent. The power of charcoal to remove alkaloids from solutions is also worth considering, as certain toxines and ptomaines are possibly of an alkaloidal nature. Charcoal may not be a direct curative agent in cases where it is of service; it may, however, prevent self-intoxication from the alimentary canal, and so prevent serious symptoms, and enable the tissues of the organism to cope successfully with a disease otherwise fatal.

It may also be borne in mind, he says, that, as suggested by Dr. Lauder Brunton, the mechanical effect of charcoal may have some additional value either as a laxative or in removing mucus from the walls of the alimentary canal.

With regard to its administration, continues Dr. Wild, charcoal, being non-poisonous, can be given in large doses; from two to six teaspoonfuls a day, gradually increased, is the quantity usually recommended. Dr. Belloc himself took over a pound in one day without bad effects. It can, at any rate, do no harm, the only evil result recorded is the rare formation of a mass causing obstruction of the alimentary canal; this can be avoided by mixing it with a sufficient quantity of water before administration.

Some patients object to taking charcoal, though it is tasteless, and it has been prescribed under other names; for example, *magnésie noire* is not infrequently used in France, and the corresponding name of black magnesia is sometimes heard in England.

Many of the older writers are very particular as to the variety of charcoal used for medical purposes. That this may really be an important factor is shown by the experiments upon the absorption of gases by charcoal above mentioned; it was found that charcoal obtained from some kinds of wood absorbed much larger volumes of gas than that obtained from others. Dr. Belloc is very emphatic as to the superiority of poplar charcoal, prepared in a particular manner, and the commission of the French Academy confirm his statement, and go on to say that, after careful examination and analysis, Dr. Belloc's charcoal did not seem to differ from other charcoals except in its extreme porosity.

The object of this research, says Dr. Wild, begun at the suggestion of Professor Leech, over four years ago, and carried out in the pharmacological laboratory of the Owens College, was to ascertain, if possible, whether there were any pharmacological grounds for the therapeutic use of charcoal.

The Entrance Requirements in the State of New York.—The following has recently become a law:

An Act to Amend Chapter Six Hundred and Sixty-one of the Laws of Eighteen Hundred and Ninety-three, entitled An Act in Relation to the Public Health, constituting Chapter Twenty-five of the General Laws, as Amended by Chapter Six Hundred and Thirty-six of the Laws of Eighteen Hundred and Ninety-five.

The people of the State of New York, represented in the Senate and Assembly, do enact as follows:

Section 1.—The laws of eighteen hundred and ninety-three, chapter six hundred and sixty-one, section one hundred and forty-five, as amended by the laws of eighteen hundred and ninety-five, chapter six hundred and thirty-five, entitled, An Act in Relation to Public Health, constituting chapter twenty-five of the general laws, are amended to read as follows:

§ 145. Admission to examination.—The regents shall admit to examination any candidate who pays a fee of twenty-five dollars and submits satisfactory evidence, verified by oath, if required, that he

1. Is more than twenty-one years of age;

2. Is of good moral character;

3. Has the general education required preliminary to receiving the degree of bachelor or doctor of medicine in this State;

4. Has studied medicine not less than four full school years of at least nine months each, including four satisfactory courses of at least six months each, in four different calendar years, in a medical school registered as maintaining at the time a satisfactory standard. New York medical schools and New York medical students shall not be discriminated against by the registration of any medical school out of the State whose minimum graduation standard is less than that fixed by statute for New York medical schools. The regents may, in their discretion, accept as the equivalent for any part of the third and fourth requirement, evidence of five or more years' reputable practice, provided that such substitution be specified in the license;

5. Has either received the degree of bachelor or doctor of

medicine from some registered medical school, or a diploma or a license conferring full right to practise medicine in some foreign country. The degree of bachelor or doctor of medicine shall not be conferred in this State before the candidate has filed, with the institution conferring it, the certificate of the regents that, before beginning the first annual medical course counted toward the degree, unless matriculated conditionally as hereinafter specified (three years before the date of the degree), he had either graduated from a registered college or satisfactorily completed a full course in a registered academy or high school; or had a preliminary education considered and accepted by the regents as fully equivalent; or held a regents' medical student certificate, granted before this act took effect; or had passed regents' examinations as hereinafter provided. A medical school may matriculate conditionally a student who is deficient in not more than one year's academic work or twelve counts of the preliminary education requirement, provided the name and deficiency of each student so matriculated be filed at the regents' office within three months after matriculation, and that the deficiency be made up before the student begins the second annual medical course counted toward the degree. Students who had matriculated in a New York medical school before June fifth, eighteen hundred and ninety, and students who had matriculated in a New York medical school before May thirteen, eighteen hundred and ninety-five, as having entered before June fifth, eighteen hundred and ninety, on the prescribed three years' study of medicine, shall be exempt from this preliminary education requirement.

A medical student certificate may be earned, without notice to the regents of the conditional matriculation, either before the student begins the second annual medical course counted toward the degree, or two years before the date of the degree for matriculation in any registered medical school, in the four cases following:

1. For matriculants prior to May ninth, eighteen hundred and ninety-three, for any twenty counts, allowing ten for the preliminaries, not including reading and writing;

2. For matriculants prior to May thirteen, eighteen hundred and ninety-five, for arithmetic, elementary English, geography, spelling, United States history, English composition, and physics, or any fifty counts, allowing fourteen for the preliminaries;

3. For matriculants prior to January first, eighteen hundred and ninety-six, for any twelve academic counts;

4. For matriculants prior to January first, eighteen hundred and ninety-seven, for any twenty-four academic counts.

But all matriculants after January first, eighteen hundred and ninety-seven, must secure forty-eight academic counts, or their full equivalent, before beginning the first annual medical course counted toward the degree, unless admitted conditionally, as hereinbefore specified, when the deficiency must be made up before the student begins the second annual medical course counted toward the degree.

Sec. 2.—This act shall take effect immediately, except that the increase in the required course of medical study from three to four years shall take effect January first, eighteen hundred and ninety-eight, and shall not apply to students who matriculated before that date and who received the degree of doctor of medicine before January first, nineteen hundred and two.

The following bill, intended to supersede the foregoing, is now before the legislature:

An Act to Provide for Four Years Study of Medicine and Attendance on Four Regular Courses of Medical Instruction of not less than Six Months each at Legally Incorporated Medical Colleges Preliminary to receiving the Degree of Bachelor or Doctor of Medicine.

The people of the State of New York, represented in the Senate and Assembly, do enact as follows:

Section 1.—Candidates for the degree of bachelor of medicine or doctor of medicine in the year 1900, or thereafter, shall have pursued the study of medicine for a period of four years and shall have attended at least four courses of medical instruction of not less than six months' duration each at some legally incorporated medical college or medical colleges, the last of the said four courses having been taken at the medical college conferring the degree, and no two of said courses shall begin or end within the same calendar year.

Sec. 2.—The incorporated medical colleges of the State of New York shall require of all marticulates, except as hereinafter provided, an examination as follows:

1. An English composition in the handwriting of the applicant of not less than two hundred words, the said composition to include construction, punctuation, and spelling.

2. Arithmetic, including fundamental rules, common and decimal fractions, and ratio and proportion.

3. Algebra through quadratics.

4. Elementary physics.

5. Latin, an amount equivalent to one year's study.

6. Elementary physiology.

7. Elementary chemistry and any one of the following studies: Zoology, botany, second-year Latin, plane geometry, the geometry to include the subject matter of Euclid, books i, ii, and iii, and any modern language or Greek of an amount equivalent to one year's study.

Sec. 3.—Each of the medical colleges of the State of New York shall be entitled to nominate to the board of regents for confirmation and appointment a board of examiners of not less than three in number. The members of the boards thus nominated and appointed shall be teachers in a college or in a university authorized by law to confer the degree of A. B. or of B. S. The said board of examiners shall hold at least three examinations each year of applicants for matriculation who are presented to the said boards by the medical colleges. Seventy-five per cent. of correct answers shall be required in each and every study. An applicant may be conditioned in not more than three of the subjects that are enumerated as requirements for matriculation, and such applicant shall have time until the beginning of the second year of medical study to make up such deficiencies, provided, however, that students who fail in any of the required subjects in this second examination shall not be admitted to a second-year course of medical instruction. The said board of examiners shall be compensated, and all other expenses of the examination shall be borne, by each medical college respectively for which these matriculation examinations shall have been made.

Sec. 4.—Matriculates or graduates of legally incorporated medical colleges which require an entrance examination at least equivalent to the examination as provided for in section 2 of this act, students fully matriculated in reputable universities and colleges, graduates of academies or high schools of the first grade or of normal schools established by State authority, and students holding medical-student certificates granted by the regents of the University of the State of New York may all be exempted from the entrance or matriculation provided for in section 2 of this act, provided that the credentials which they present in order to secure such exemption include Latin of an amount equivalent to one year's study.

Sec. 5.—The degree of doctor of medicine conferred by a medical college incorporated under the laws of the State of New York shall entitle the rightful holder thereof to appear

before the board of medical examiners of the State of New York for examination for a license to practise medicine and surgery, on payment by the applicant for the examination of the fee provided by law for such examination, and upon presentation by such applicant of acceptable certificates of his age and moral character.

Sec. 6.—The provision of four years study of medicine, and of four courses of college instruction, as contained in this act, shall not apply to any student who has been duly matriculated in any legally incorporated medical college of the State of New York before the first day of December, 1896; but such exemption shall not be continued after the close of the regular session of any medical college for 1898 to 1899.

Sec. 7.—All acts or parts of acts, general or special, now existing that are not in accordance with the provision of this act, or that are inconsistent therewith, are hereby repealed.

Sec. 8.—This act shall take effect immediately.

Curious Observations concerning Small-pox Patients.—In an article in the March number of the *Virginia Medical Monthly* Dr. Llewellyn Eliot mentions some peculiarities which he has observed during an experience of fifteen or sixteen years with small-pox. There is a want of truthfulness in small-pox patients, he says, which is surprising, and during their sickness their statements must be accepted with some allowance. This trait is unintentional, but it is embarrassing to the investigator. There is a singular docility on the part of those patients who are hardened characters; they obey rules and endeavor to conduct themselves with propriety during their illness, but in convalescence they assume more their natural character. The patient's first want, as soon as he can open his eyes, is a looking-glass, that he may look upon his loathsomeness. The appetite of the convalescent is enormous. He wants his three full meals a day, and always wants the best the market can produce.

Patients with this disease, says the author, are able to take larger amounts of whisky than those in the general run of diseases, without showing the intoxicating effects, and an allowance of sixteen ounces in twenty-four hours during the height of the disease is not too much; so, when whisky is given, he says, it should be given with a free hand. Morphine, to have any appreciable effect, must be given in half-grain doses, but if lung complications exist, it is better not to use it at all. The dose of half a grain applies only to the illness and not to convalescence.

Dr. Eliot states that he has used calcium sulphide extensively in small-pox, and that it must be given in large doses. In the last outbreak of the disease he used doses of from one to four grains every three hours, and continued them until there was some effect upon the pustules, when the dose was diminished, but never to less than a grain, except in children. Concerning the peculiar smell in this disease, he says it often aids in the diagnosis. It can not, however, be described, and it is not always present.

There are certain omens about this class of patients which, while they are not assured and invariable in their appearance, are, he says, of very grave prognostic import. For instance, Dr. Eliot has always noticed, in moving a patient to the hospital, that those who voluntarily covered their faces and heads, without any suggestion to do so, almost invariably died. When the face of a white patient assumes a dark, leaden hue during the first days, death may be predicted almost with certainty. Those patients who presented great swelling of the face and head in the beginning always suffered from severe attacks. There is a peculiarity of the walk which is very ominous; the patient lifts the feet high, as if he were ascending stairs, and this applies to the early eruptive stage. There is a peculiarity of the glance—that is, the eyes are directed to the ground, while the patient appears to be looking up, the whites of the eyes showing very prominently; there is either an over-action of the inferior rectus or an entire want of action of the superior rectus—sursubvergence.

Dr. Eliot says that he has noticed that every patient who escaped from the hospital or from home during the delirium of the disease died in a few days. There are some peculiar things, he says, in regard to the escape of patients. Their main idea is to get home. He has never seen a sick patient take anything that did not belong to him. If a patient has brought a blanket to the hospital, and it is in sight on another bed, he will go and take it from that bed. If clothing is hanging on the walls or on chairs, he will take only his own, and for a patient to do this is equivalent to signing his death warrant. Patients who are about to escape will exhibit a degree of cunning that is marvelous.

Another peculiar feature which was observed by the author was the appearance of a secondary eruption, which rapidly ran its course of pustulation and desiccation, after convalescence had been well established. He called attention, he says, to this peculiarity in 1882, and it was verified during the last outbreak by Dr. Nevitt and himself. In looking for the eruption, he says, always look first upon the soft palate. In regard to the temperature, the author noticed that there was a very marked difference between the lingual and the axillary reading in some cases in the beginning of the disease. At each observation the thermometer was left in position for five minutes, and one observation was made immediately after the other. Dr. Eliot says he is unable to state the cause of this difference.

A New Form of Incontinence of Urine.—The *Revue internationale de médecine et de chirurgie* for March 10th contains an abstract of an article from the *Annales des maladies des organes génito-urinaires*, in which the author, M. Abarran, calls attention to a new form of incontinence of urine in young girls, which is due to a defect in the development of the internal genital organs. He relates the case of a patient who had been troubled with incontinence for six years. It had appeared when menstruation was established, and all treatment had failed to bring about a cure. The patient was thin, badly developed, and nervous. The external genital organs were normal, but an examination revealed the absence of the anterior *cul-de-sac* of the vagina; the vaginal wall was tense, and it was inserted directly on the anterior lip of the cervix uteri; the posterior *cul-de-sac* was well developed; the uterus was small and conoid; the left ovary was in its proper place, but the right ovary was nearer than normal to the anterior vaginal wall. The bladder and the urethra were normal, but a malformation of the internal genital organs existed which consisted of an abnormal adhesion of the posterior wall of the bladder to the anterior surface of the uterus. This explained the cause of the incontinence. When the patient lay down the uterus became displaced backward and dragged with it the posterior wall of the bladder, which adhered to its anterior surface; when the patient stood up the uterus became displaced forward and pressed heavily on the posterior wall of the bladder, thus causing the vesico-urethral sphincter to remain open.

An incision was made in the anterior wall of the vagina, extending from the neck of the uterus almost to the urethra.

The uterus was detached from the bladder, and the inter-utero-vesical space was packed with iodoform gauze. At the end of fifteen days the faradaic current was applied to the neck of the uterus three times. This treatment, says the author, resulted in a complete cure.

Sulphanilic Acid in the Treatment of Iodism.—In an abstract of an article from the *Revue générale de clinique et de thérapeutique*, which is published in the *Revue internationale de médecine et de chirurgie* for March 10th, the writer remarks that among the agents for attenuating if not completely arresting the pathological symptoms which constitute iodism, there is one to which Ehrlich has drawn attention—namely, sulphanilic acid. According to him, the setting free of the iodine of potassium iodide in the organism is effected by the nitrous acid which proceeds from the decomposition of the alkaline nitrites under the influence of carbonic acid. This decomposition is not effected, however, in the presence of sulphanilic acid. At all events, says the writer, the action of sulphanilic acid on potassium iodide may be demonstrated by the following experiment: Ten cubic centimetres, each, of a one-in-ten solution of potassium iodide, a one-per-cent. solution of potassium nitrite, starch water, and distilled water are mixed in a glass beaker. In another glass, ten cubic centimetres, each, of the same solution of potassium iodide, the nitrite solution, and starch water are mixed with ten cubic centimetres of a saturated solution of sulphanilic acid. A current of carbonic acid is then passed into each glass, and it will easily be seen, owing to the formation of blue iodide of starch, that the decomposition of the potassium iodide is intense in the first glass, whereas in the second glass this decomposition does not take place.

Whatever may be the interpretation of the result of these two experiments, says the writer, it is easy to see that the sulphanilic acid completely nullifies the decomposing action of the nitrous acid on the alkaline iodides. This fact, he says, led Ehrlich to the belief that the acid would exert an efficacious action in preventing iodism.

With regard to the dose, ninety grains a day may be given without any inconvenience. It should be associated with sodium bicarbonate, as this facilitates the solution of the acid, which is only slightly soluble in water.

The Treatment of Ulcer of the Stomach.—In the *Progrès médical* for March 7th Dr. Paul Cornet says that the treatment to be carried out in this affection varies according to the presence or absence of hæmorrhage. In the first condition absolute rest and immobilization of the stomach are indicated. There should be complete abstinence as regards food, not even ice being allowed, as it is more injurious in its effects than useful. Occasionally a blister or compresses of ice over the epigastrium give good results. If the hæmorrhage persists, a syringeful of the following solution may be injected into the region of the stomach:

Dialyzed extract of ergot	30 parts;
Distilled water	150 "
Carbolic acid	3 "

No nourishment should be given, although if the patient is weak and the circumstances present some danger, alimentary enemata, such as the following, should be resorted to exclusively:

Milk	8 ounces;
Salt	1 teaspoonful;
Red wine,	
Starch, each	1 dessertspoonful.
The yolks of two eggs.	

This is to be heated until it is lukewarm and slowly injected from two to three times a day after an enema of water. Pain should be combated with narcotics, such as codeine hydrochloride or codeine phosphate, in doses of from half to three quarters of a grain. If the constipation requires treatment, enemata composed of warm water and soap, glycerin, and olive or castor oil may be administered. For from four to seven days after the hæmorrhage has occurred the patient must remain in bed on his back, and warm liquid food may be given, such as milk and limewater, or milk with a little tea and coffee, beef tea, bouillon, Koch's peptones, Leube's meat solution, emulsions made from the whites or the yolks of eggs, and the waters of Vichy, Vals, Krondorf, Lachingen, etc. Cocoa, chocolate, and wine should be avoided.

In the second week after the hæmorrhage the treatment may consist in the following: Night and morning the patient should take Carlsbad water with seventy-five or one hundred and fifty grains of artificial or natural Carlsbad salts. Compresses hot enough to redden the skin should be employed constantly. The preceding diet is continued, with nutritive enemata in case of great weakness.

During the third and fourth weeks the patient may be placed on a sofa and allowed to move a little. The use of the Carlsbad water is to be continued for at least six weeks. The diet, in which milk still continues to be the principal article, may include biscuits, cakes, roast veal, meat pie, fish, shellfish, a little weak wine, and acid drinks. After the fourth week the following may be added: Boiled potatoes, spinach, carrots, peas, beets, and red meats well cooked. For a year or more, raw or iced fruits, highly spiced food, and very hot or cold drinks should be avoided.

Concerning the treatment in cases where there is no hæmorrhage, the author calls attention to the following methods:

1. According to Anderson and Donkin, for two or three weeks the patient is nourished exclusively by the rectum. It is only in cases of extreme thirst that small pieces of ice, Seltzer water, or acid drinks may be allowed. Ten days later, milk, tea, bouillon, and red wine may be carefully given by the mouth. Hot compresses should be used over the epigastrium.

2. In light cases, and even in certain dangerous ones, good results may be obtained from the systematic use of silver nitrate. In the beginning a solution of four grains of the nitrate in five ounces of water may be employed in doses of a dessertspoonful three times a day. The strength of the solution is afterward increased to five and then to six grains. A proper diet is combined with this treatment. Very frequently a diarrhœa is observed with this treatment, but it is not intense and disappears with the continuation of the treatment.

3. Pleiner recommends the bismuth treatment. According to him, the carbonate is preferable to the subnitrate. He prescribes from 150 to 300 grains of bismuth subnitrate suspended in six ounces of warm water, which is to be introduced into the stomach through a tube after previous lavage. This solution is at first introduced every day, then every two days, etc., until the inflammatory condition disappears. The indications for this treatment are, according to Pleiner: 1. In ulcer, ulcerous cancer, and hæmorrhagic erosions. 2. As a specific agent in gastric and duodenal ulcers. It is contra-indicated in affections of the stomach where there is very little secretion.

4. According to Leubuscher, Schäfer, and Hitzig, morphine is always a prompt and sure agent, and at the same time it diminishes considerably the gastric over-secretion.

Boas, however, gives the preference to codeine, particularly the hydrochloride and the phosphate. He prescribes the following formulas:

1. Codeine,
   Extract of belladonna, each ..... 6 grains;
   Bismuth carbonate..... 45 "
   Sugar of milk..... 60 "

Divide into ten capsules, of which from one to three a day are to be given.

2. Codeine phosphate ..... 15 grains;
   Extract of gentian..... q. s.

Make thirty pills, of which from one to three may be taken daily.

A Medical Civil Service Examination.—On Friday, April 10th, the New York Civil Service Commission will hold an examination for the position of pathologist (Department of Public Charities) in their office, at 10 A. M. Citizens of the United States, over twenty-one years of age, are eligible to this examination. The civil service regulations require that "No person shall be admitted as a competitor for appointment who shall not produce to and leave for a reasonable time with the examining board a diploma or certificate from some reputable institution showing that he has pursued in such institution, with credit, for two years, a course of study adapted to qualify him for the position which he seeks or for which his appointment is desired." Application blanks may be procured by applying to S. William Briscoe, secretary, Criminal Court Building, New York.

An Ointment for Chapped Hands.—The *Lyon médical* for March 10th publishes the following formula:

Menthol..... 15 parts;
Salol..... 30 "
Olive oil..... 225 "
Lanolin..... 675 "

The New York Academy of Medicine.—At the last stated meeting, on Thursday evening, the 2d inst., a paper on The Clinical Aspects of Glycosuria was to be read by Dr. William H. Draper, and one on the Cutaneous Manifestations of Diabetes by Dr. Prince A. Morrow, and the subject was to be discussed by Dr. William H. Thomson, Dr. A. H. Smith, Dr. W. G. Thompson, Dr. A. R. Robinson, Dr. G. H. Fox, Dr. S. Sherwell, Dr. S. Lustgarten, and others.

At the next meeting of the Section in Pædiatrics, on Thursday evening, the 9th inst., Dr. A. Jacobi will read a paper entitled Some Relations of Rhachitis. Patients will be presented.

The German Medical Society of the City of New York.—The programme for the next meeting, to be held on Monday evening, the 6th inst., includes exhibitions of patients and specimens; the exhibition of apparatuses for the analysis of small quantities of urine obtained by catheterism of the ureters, by Dr. F. E. Sondern; and a discussion of the question May Syphilitics Marry? Dr. H. G. Klotz and Dr. S. Lustgarten are to contribute papers to this discussion.

Ammonol, says the *Lancet*, is the name given to ammoniated phenylacetamide. The ammonia is evidently loosely combined, since the sample of the yellowish amorphous powder which was examined for that journal smelt strongly of ammonia. It accordingly behaves as a stimulant as well as an antipyretic and analgetic, thus differing from the almost numberless coal-tar derivatives and antipyretics with which modern pharmacology is deluged. Ammonol has been used chiefly in the relief of rheumatism and neuralgic pains, and in the treatment of the sequelæ of alcoholic excess. The presence of ammonia in a more or less free state gives it additional properties as an expectorant, a diuretic, and a corrective of superacidity. Ammonol is also prepared in the form of salicylate, bromide, and lithiate.

Salacetol as a Remedy in Rheumatism and in Intestinal Diseases.—In the *Deutsche Medizinal-Zeitung* for March 12th there is a brief summary of an article which is credited to the *Bollettino della Accademia di medicina di Genova*, but the author's name is not mentioned. He says that in the organism salacetol splits up into salicylic acid and acetol, and that the acetol is changed into acetone, which is less harmful than the phenol derived from salol. While salacetol has no effect on soluble ferments, it exerts an inhibitory and destructive influence on the development of morphological ferments. In acute articular rheumatism, given in a dose of thirty grains, it lowers the temperature and soothes the pain. Both actions begin to show themselves in an hour and a half or two hours, and last for two or three hours. The author considers the remedy useful in intestinal affections as well as in rheumatism, but the abstract contains no mention of what intestinal affections he has in mind.

Salol and Antipyrine in the Treatment of Uterine Hæmorrhage.—Berman (*Allg. Wiener med. Ztg.*, 1895, No. 35; *Ctrlbl. f. Gynäk.*, March 15, 1896) gives an account of Labadie-Lagrave's method of using intra-uterine applications of a mixture of salol and antipyrine as a hæmostatic. Equal quantities of the two drugs are heated together in a test tube over a lamp until a deep-brown mixture forms. As soon as this has cooled sufficiently, a film of cotton on an applicator is dipped into it and passed into the uterine cavity. This is done two or three times in succession. The procedure is said to be painless and not to be followed by unpleasant effects. It is said also that a second resort to it is rarely necessary. Labadie-Lagrave has been using it since the year 1893, and with better results than with any other method. In cases of fungous endometritis, the application should be made after curetting. It is not only hæmostatic, but also antiseptic, and tends to prevent a relapse.

Tussol in the Treatment of Whooping-cough.—Rothschild (*Dtsch. med. Woch.*, 1896, No. 1; *Therap. Woch.*, March 15, 1896) gives an account of an epidemic of whooping-cough which lasted from October, 1894, until the middle of February, 1895. He treated sixty-one cases, which he divides into three groups. In the first group, consisting of sixteen cases, tussol was not used. The disease lasted from six to ten weeks and was very severe; two of the children, about six months old, died. The eighteen patients of the second group were treated at first with other remedies, and then with tussol. During the first period of their treatment no substantial reduction of the number or the severity of the paroxysms was achieved, but such a reduction occurred after four days' use of tussol. In the twenty-seven patients of the third group the disease was milder; the paroxysms were short, infrequent, and followed by far less weakness than in the two other groups. In very few of these cases only did the tussol seem to have no effect, and they were cases in which it was doubtful if the remedy was given regularly. The author states it as a certainty that in patients who were treated with tussol from the outset, and took their doses regularly, the duration of the disease was notably shortened and its whole course was much milder. In a few of them it lasted not longer than about a fortnight.

FIG. 1 (CASE I).—A Röntgen picture by Dr. W. J. Morton of bones of the foot, showing enlargement of metatarsal and phalangeal bones. Time of exposure, fifteen minutes.

FIG. 2 (CASE II).—A Röntgen picture by Dr. W. J. Morton of bones of the foot, showing bony enlargement upon the third metatarsal bone and the probable presence of a needle.

Original Communications.

BILATERAL NEURITIS OF THE BRACHIAL PLEXUS

FOLLOWING ACUTE CROUPOUS PNEUMONIA.

By WILLIAM M. LESZYNSKY, M. D.,
INSTRUCTOR IN MENTAL AND NERVOUS DISEASES AT THE NEW YORK POST-GRADUATE MEDICAL SCHOOL, ETC.

All practitioners are more or less familiar with the nervous manifestations that frequently arise in the course of acute lobar pneumonia. In former times it was thought that symptoms such as delirium, headache, etc., were due to the continued fever or hyperpyrexia. To-day, however, most of these symptoms are attributed to functional disorder resulting from the condition of toxæmia.

Among the more prominent complications affecting the nervous system is purulent cerebral meningitis, which in

my experience, and so far as I can ascertain, has invariably proved fatal.

It is well known that acute lobar pneumonia or croupous pneumonia is classified by all recent writers as an acute infectious disease, and is assumed to be caused by the *Micrococcus lanceolatus*, which excites a local inflammation in the lungs, and by its toxines constitutional disturbance of varying intensity (Osler).

Many recent investigations have confirmed this view, and this conception of the disease is held by the majority of pathologists of the present day. The medical literature of the last few years abounds in reports of peripheral paralyses following measles, scarlet fever, diphtheria, typhoid fever, small-pox, influenza, articular rheumatism, etc.

Anatomical examination has demonstrated in many of these cases either hæmorrhages or exudation into the nerve sheaths, interstitial neuritis, or parenchymatous degeneration involving the axis cylinders. With the foregoing facts in view, the following case is placed on record:

W. E., born in the United States, thirty-six years of age, and a bookkeeper. During the third week of an attack of acute pneumonia affecting the right side, he began to have pain in both shoulders, which rapidly extended to both arms and hands. The pain was of a sharp, darting, and shooting

character, being so severe that it frequently kept him awake at night. It gradually subsided, and two weeks later he first noticed that the left shoulder was weak and there was some difficulty in moving it. The right arm also felt weak.

Examination: Left Upper Extremity.—There is typical paralysis of the serratus magnus muscle and paresis of the superior portion of the trapezius, and consequent inability to raise the arm above the horizontal position. There is also some atrophy of these muscles and the supraspinatus and infraspinatus. No disturbance of sensation.

Right Upper Extremity.—Supraspinatus and infraspinatus are somewhat atrophied; deltoid markedly atrophied and paretic, with loss of faradaic irritability, but normal galvanic reaction. Absolute anæsthesia in the sensory distribution of the circumflex nerve. Supinator longus slightly paretic.

The triceps reflex is active on both sides. All of the other nerves and muscles react normally to the faradiac current.

Both knee-jerks are well marked. No clonus. No involvement of the lower extremities. The pupils are normal in size and reaction. No evidence of lesion in ocular fundi. The heart's action is somewhat feeble. The lungs are normal. Examination of urine negative.

There is no history of exposure to cold, traumatism, alcoholism, syphilis, or rheumatism, or other similar toxic condition that could be considered as a constitutional or local cause of his present condition.

This patient was first seen by me on June 27, 1895. The triweekly application of the galvanic current to the paralyzed and atrophied muscles resulted in a moderate degree of improvement in motility after four months' treatment. General tonic measures were also instituted.

The accompanying reproductions of photographs clearly show the typical deformity of the back resulting from paralysis of the left serratus magnus.

Among three hundred or more cases of peripheral neuritis observed by the writer, this is the only one into which pneumonia entered as an ætiological factor.

Osler, in the last edition of his work on the *Practice of Medicine* (page 557), states that "among rare complications (of pneumonia) may be mentioned peripheral neuritis, of which several instances have been described."

One of the prominent features in the case under consideration was the paralysis of the serratus magnus. It may therefore be interesting to note that the usual causes of such paralysis are traumatism, pressure from carrying heavy weights on the shoulder, excessive muscular effort, exposure to cold, and the involvement of the muscle in the course of progressive muscular atrophy. The unusual features in this case are: 1. The primary cause of the acute degenerative neuritis affecting the upper branches of the brachial plexus on both sides. 2. The early limitation of the permanent lesion to the *right* circumflex nerve and the *left* posterior thoracic nerve.

959 Madison Avenue.

General Statistical Result of the Cases of Ocular Diphtheria treated by Antitoxine Serum.—Coppez and Funck (*Arch. d'ophthal.*, November, 1895) have always found this method of treatment perfectly and rapidly successful, so far as the actual diphtheritic condition of the lids and conjunctiva is concerned, and the change for the better is usually extremely rapid. But if the cornea is already involved, the serum has no effect on the destructive process already started in the cornea, for the latter is not directly due to the Loeffler bacillus.

PAPILLOMATA OF THE SOFT PALATE.*

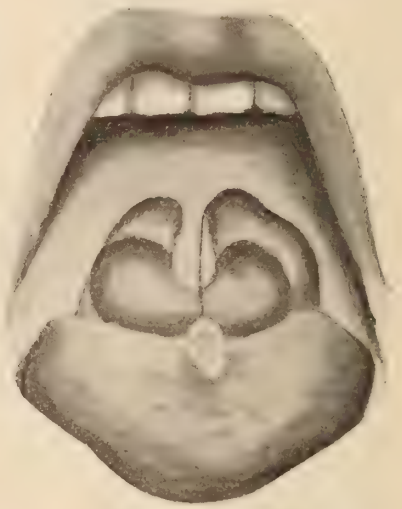
By W. SCHEPPEGRELL, A. M., M. D.,
NEW ORLEANS,
ASSISTANT SURGEON TO THE EYE, EAR, NOSE, AND THROAT HOSPITAL, ETC.

Papillomata of the soft palate are found more frequently than other neoplasms in this region. Their point of attachment is, in the majority of cases, the uvula, although it may be any part of the velum. They are of benign character, and in the dozen or more cases which I have seen they caused little or no irritation, and in many cases their existence was unknown to the patients.

Papillomata of the palate vary in size from an almost imperceptible excrescence to a growth three quarters of an inch in diameter, as in the case reported by Lefferts (*Transactions of the American Laryngological Association*, 1889).

The diagnosis presents but little difficulty, the papilloma being recognized by its soft, white, mamillated appearance; where there is any doubt as to the nature of the neoplasm, the diagnosis can easily be confirmed by the microscope. The following case is of interest on account of the comparatively large size of the neoplasm, the length of the pedicle, and that, notwithstanding this, it not only caused no irritation or inconvenience, but the patient was absolutely unaware of its existence:

Mr. J. E., of Jackson, Miss., aged twenty-one years, called at my office to consult me about his ear. Six years ago the drum membrane had been accidentally perforated by a piece of wood which had been forced into the ear; he was confined to his bed for six weeks, and the discharge continued for three months longer. When he was examined, however, the drum was found to be healed, although the cicatrix could be seen in the posterior inferior segment. While I was examining the throat as a matter of routine, a pediculated tumor was seen attached to the soft palate near the uvula, as shown



Papilloma of the soft palate.

in the figure. The pedicle was fifteen millimetres in length, allowing considerable latitude in the movements of the tumor; sometimes in speaking and swallowing it would disappear

* Read before the Orleans Parish, La., Medical Society, February 8, 1896.

behind the palate, sometimes hang below the uvula, and occasionally become fixed between the pillars of the tonsils.

The tumor was a flat spheroid about nine millimetres in diameter. When I called the attention of the patient to the presence of this neoplasm, and showed it to him by means of a mirror, he expressed great surprise, never having been aware that there was anything abnormal in his throat.

He called again at my office two weeks afterward, with the request that I would remove the growth, which, since he had become aware of its existence, had caused him annoyance. It was easily removed by the cold snare, and two weeks later no trace of its existence could be found on the palate.

A microscopic examination confirmed the clinical diagnosis that the tumor was a papilloma.

In the following case the papilloma was attached to the soft palate almost in the same position as in the last case, but, in spite of the small size of the tumor (three millimetres) and the shortness of the pedicle, it set up considerable irritation:

Edward B., aged eighteen years, white, called at the Eye, Ear, Nose, and Throat Hospital January 6, 1896, and gave the following history:

For the past two months he had been troubled with an irritable cough, which would begin as soon as he went to bed, and would sometimes last for an hour or more; he realized that it was due to an irritation in his throat, and on examining it with a mirror, he found a growth hanging down near the uvula. The presence of this growth seemed not to inconvenience him in speaking or swallowing, but as soon as he went to bed it would irritate his throat and bring on a paroxysm of coughing.

At first sight the growth appeared to be attached to the tip of the uvula, but by moving the growth by means of a probe, the point of attachment was found higher up on the soft palate, the pedicle allowing it to come to the end of the uvula; the growth presented the appearance of a papilloma in this region. After applying a ten-per-cent. solution of cocaine, the papilloma was seized by an angular forceps, and the pedicle cut with the scissors at the point of attachment to the soft palate. Ten days later the patient reported that he no longer had any irritation in the throat, or the paroxysms of coughing which had annoyed him for the past two months.

THE BATHS OF NAUHEIM IN THE TREATMENT OF DISEASES OF THE HEART

AND THE THERAPEUTIC METHODS OF THE DOCTORS SCHOTT.

By WILLIAM C. RIVES, M. D.,

LECTURER ON DISEASES OF THE CHEST AND ON GENERAL MEDICINE IN THE NEW YORK POLYCLINIC.

The remarkable and in some respects unique results attained at Nauheim in cases of heart disease have begun recently to excite much interest and attention, and it is highly desirable that the particulars of a treatment which has proved to be an invaluable addition to our resources for the relief of a numerous class of sufferers should become as far as possible widely known.

The baths of Nauheim, with a resident population of three thousand inhabitants, lie at the foot of the eastern end of the Taunus range, at an elevation of four hundred and fifty-three feet above the sea, on the edge of the level and fertile plain—the Wetterau—which extends thence to the river Main. They are three quarters of an hour distant by rail from Frankfort on the line from that city to Cassel and Hanover, and within easy driving distance of the well-known and more fashionable health resort of Homburg.

A straight road leading downhill from the station brings the visitor in a few minutes through the newer part of the town, which consists almost exclusively of villas for the accommodation of guests, to a street bordering in a semicircle a spacious and singularly well laid out park adorned with many beautiful trees.

From this point the town proper is quickly reached, presenting in itself few features of interest. It lies immediately to the south of the park, to the west of which is still another district of villas, occupying the lowest slopes of the Johannisberg.

The attention of the stranger is at once arrested by a number of large, unsightly structures in the plain adjoining Nauheim, fifty feet high, and more than a hundred and fifty long—the *Gradirhäuser*, or graduating houses, used in the process of making salt, which is manufactured there in large quantities. The old town of Friedberg, with its ancient walls and towers, only a mile distant, is a most picturesque object in the landscape, and from various points can be seen the Winterstein, the highest elevation in this part of the Taunus range.

In the midst of the park, near the banks of the little river Usa, burst forth the springs supplying the bath houses, on which the fame of Nauheim depends. These come from a great depth (five hundred and twenty-three and five hundred and ninety feet), and were found by means of borings made at different times in the course of this century. The two now in use—No. 7, Grosser Sprudel, and No. 12, the Friedrich Wilhelm's Quelle (the figures being used to designate the number of the boring)—spout forth as white foaming liquids, only thirty-two feet apart, high above the surface of the ground, and are connected with five bath houses, four in the immediate neighborhood and a fifth (bath house No. 4) which provides only simple saline baths from spring No. 7 outside the park at a little distance from the others.

Bath house No. 5, opened in 1892, is much superior to the rest, and is a handsome building completely furnished with every requisite. At the present time there are in the whole establishment at Nauheim one hundred and ninety-six bathrooms with two hundred and four tubs. The tubs are of wood, painted, which has been found to be the most satisfactory material, and are of large size, so that when a tub is filled the body of the bather is entirely immersed up to the neck, and the pressure of the water on its surface is very considerable. Everything connected with the baths, which are under government control, is admirably systematized, and the attendants are well fitted by long experience for the discharge of their duties.

Drinking the waters plays but a secondary part at Nauheim, but their internal use is of some value in gouty

conditions and disorders of the liver, the Kurbrunnen diluted being said to resemble the Ragoczy spring of Kissingen, and the Karlsbrunnen, the Elizabeth Brunnen of Homburg. The Ludwigsbrunnen is also used as a table water. The Schwalheim spring, two miles distant, yields a ferruginous water containing carbonic acid.

The first bath house at Nauheim was opened in 1835, and the baths have been used for many years with advantage in gout, rheumatism, rickets, and so-called scrofulous diseases, and have acquired a well-merited repute in the treatment of locomotor ataxia and other diseases of the spinal cord; but F. W. Beneke, professor of general pathology and pathological anatomy at Marburg—a highly picturesque university town an hour by rail north of Nauheim—was the first to show, contrary to then prevailing views, not only that patients with heart disease, more especially those recovering from acute rheumatism, can bear balneological treatment, but that they are actually benefited by such a course. Beneke, who was physician to the Nauheim baths from 1857 to 1866, and continued to visit them up to his death, in 1883, wrote several articles upon the effects he had observed there, the earliest of which appeared in 1859. After the publication of his more important paper in 1872 (6) patients with heart disease began to frequent Nauheim in greater numbers, and, following the lines of investigation suggested by his observations, the baths began to be studied more closely by other physicians.

In 1880 Dr. August Schott, who had been making independent studies since 1871, published a paper (20) by far the most important and exhaustive of any that had yet appeared, and the first to do full justice to the remarkable effect of the baths upon the heart. Numerous articles relating to the same and allied subjects have since been written by himself and his brother, Dr. Theodor Schott, and to their joint labors the present celebrity of Nauheim is largely due.

Within the last ten years the annual number of visitors during the season, a large proportion of whom are heart patients, has more than doubled, amounting to over twelve thousand in 1895.

The effect of the Nauheim baths, as proved by repeated observations, is to regulate the action and strengthen and improve the nutrition of the diseased heart, whether its inability to properly perform its functions depends upon valvular lesions and their consequences or upon malnutrition or disease of the cardiac muscular substance. These results are chiefly due to the chloride of sodium and the more irritating chloride of calcium, the former of which constitutes about four fifths of the solid constituents, and to the free carbonic acid, which they are said to contain in larger amount than almost any other baths in Germany. They contain, moreover, a considerable percentage of iron, to which may also be attributed a tonic influence. The most powerful though more temporary stimulation, as proved experimentally, is caused by the carbonic acid. By means of the action of these saline and gaseous contents of the bath upon the terminal branches of the sensory nerves of the skin an impression is made upon the cardiac and vaso-motor centres, by which the heart is reflexly stimulated to more powerful and vigorous contraction and the arteries are more completely filled, and at the same time the cutaneous vessels dilate, peripheral resistance is lessened, and the whole circulation is rendered freer and more active, while metabolism is promoted and a marked influence exerted upon the trophic centres, as must be inferred from the striking evidences of improvement in the bodily nutrition in general, and in that of the heart in particular, and the persistence and even increase of the good effects long after the patient has completed the course.

The immediate objective results of the baths are as follows: Examination of the pulse, confirmed by sphygmographic tracings and the sphygmomanometer, shows it to be made slower, stronger, and of increased volume, the cardiac sounds become more distinct, and in cases of dilatation an unmistakable contraction of the heart, demonstrable by percussion and by the change in the position of the apex beat, is observed. This contraction is most noticeable in the transverse diameter of the heart, and takes place to little or no extent when the enlargement is solely compensatory, as in many cases of organic mitral and aortic regurgitation. Dr. Bezly Thorne, however, affirms that there is a diminution in the area of cardiac dullness, as measured in the oblique transverse diameter, of a third to about half an inch even in the healthy heart. The respiration becomes easy, and is slower and deeper, and there is usually increased action of the kidneys. Subjectively, a sense of weight and oppression on the chest, greater than in an ordinary bath, is at first experienced, which quickly passes off; the skin soon becomes warm, and tingling, accompanied with redness, is felt in its more sensitive parts. Afterward, the patient feels invigorated, and is generally conscious of a sense of drowsiness.

Baths capable of producing these effects are not the monopoly of Nauheim; it has not been denied that analogous results may be obtained from other natural mineral baths of similar composition, and by natural carbonated iron springs, or even by artificially prepared baths; but the peculiar advantages of Nauheim are the following:

1. It possesses an abundant flow of water from two springs, containing different proportions of the needful salts and carbonic acid, either of which can be used singly, or mixed together in every proportion.

2. The natural temperatures of the springs (No. 7, 88·88° F.; No. 12, 95·5° F.)—a feature of great importance—are among those found most applicable to heart patients, so that more or less complex arrangements for heating the baths, which, moreover, would drive off a portion of the carbonic acid, are unnecessary. At Nauheim, when it is desired to raise the temperature, an inappreciable amount of hot water is added; to cool the baths, lumps of ice are employed.

3. The presence of an unusually large amount of carbonic acid in the waters.

4. The possibility of providing a steady flow of the spring water, in and out of the bath (*Strombad*), at a suitable and constant temperature.

5. The Nauheim physicians are specialists in diseases of the heart; the employment of mineral baths for the

treatment of heart disease originated at Nauheim, and nowhere else is their proper use as yet so thoroughly understood.

Other baths in Germany where good results are likewise to be obtained, some of which have been reported, are, among the saline, those of Kissingen and Rehme-Oeynhausen, and of the iron waters, Cudowa, Pyrmont, and Schwalbach. In our own country there is every reason to believe that the springs of Ballston and Saratoga are in many respects adapted for successfully conducting the balneological treatment of heart disease, on account of the large quantities of chloride of sodium and carbonic acid which they contain in various proportions, so that as at Nauheim different springs could be used, according to the needs of each case. The only apparent objections are the presence of unnecessarily large amounts of carbonates of the alkaline earths, the absence of chloride of calcium, and the necessity of artificially heating the baths, none of which, however, constitute insurmountable obstacles.

Artificial baths may be prepared by dissolving the requisite percentage of required salts, or, as Dr. John Broadbent points out, by the use of sea water, which contains 2·7 per cent. of chloride of sodium, and by adding for the production of carbonic acid suitable proportions of commercial muriatic acid and bicarbonate of sodium or chalk, or, as has been suggested, a mixture of the bicarbonate and bisulphate of sodium. The gas, however, when thus evolved, escapes more rapidly than it does from the natural baths.

Good results may undoubtedly be obtained in this way, and such baths have been employed by Dr. Bezly Thorne in London and by Dr. Babcock in Chicago, as well as in the Middlesex Hospital, with success; but the greater freedom from counteracting injurious conditions to be had at a spa, and the various advantageous mental and hygienic influences to which the patient is there subjected, are sufficient reasons, even allowing the artificial baths to be as effective as the natural waters, why the results obtained at Nauheim are more striking than those reported from the cities. Mineral springs in the country, especially when possessing a part of the requirements, offer more promising opportunities, and provision has been or is being made at Harrogate and various places in England for carrying out the treatment.

In administering the Nauheim baths to patients with heart disease several varieties are employed, for when the effect of one kind of bath becomes less and less marked, owing to the nervous system gradually becoming habituated, a fresh stimulus is imparted by changing to a stronger bath, and thus a longer course can be taken than would otherwise be advantageous. The method employed by Dr. Theodor Schott, which is in the main practised by the other Nauheim physicians, is the following: The first bath ordered (*thermal Soolbad*) is supplied by the water taken from the receiving basins, from which by exposure to the air a large part of the carbonic acid has escaped, and a considerable proportion of iron and salts has been precipitated, so that it is of a muddy color and contains few or no bubbles of gas. No. 7 is the spring usually first employed, as it contains the smaller proportion of salts, 2·18 per cent. of chloride of sodium and 0·17 of chloride of calcium. Dr. Schott recommends for some cases, at the beginning of treatment, baths containing only one per cent. of chloride of sodium and 0·1 per cent. of chloride of calcium. The natural temperature is 88·8° F., but this at first is raised to one varying from 92° to 95° F. Temperatures above that of No. 12 spring, 95·5 F., are not suitable for heart patients. The duration of the bath, at first six to eight minutes, is gradually lengthened every few days, one minute at a time, while at intervals the temperature is lowered about one degree (half a degree centigrade).

At first every second or third day, afterward every fourth or fifth, the bath is omitted. The percentage of salts is now gradually increased, which may be done at first by mixing the waters of Nos. 7 and 12, but is usually accomplished by adding one litre of Nauheim "*Mutterlauge*" (mother-lye)—the uncrystallizable liquid left behind in the manufacture of salt—which is subsequently increased to two and three litres, or occasionally even more. The main ingredient of this is chloride of calcium, which may be raised eventually in the bath to the amount of 0·5 per cent. When the proportion of salts is thus rendered sufficiently large, the temperature by this time having been lowered several degrees, and the duration extended to not more than twenty minutes, the patient is ready to continue treatment by a course of Sprudel baths from either No. 7 or No. 12, the former containing the greater amount of carbonic acid, the latter of salts. These differ from the others in being supplied with water direct from the springs, before it has undergone the action of the air, so that it appears of crystal clearness and filled with sparkling bubbles of carbonic acid, which it retains in undiminished quantity. They are likewise at first taken warm, usually at their natural temperatures, and for a short time—about eight minutes—and as they are continued the temperature is lowered in the same cautious way and the duration similarly prolonged. The saline contents may also be increased by successive additions of "*Mutterlauge.*" In consequence of the powerful excitation of the cutaneous circulation by the carbonic acid, which creates an agreeable feeling of warmth, the temperature can be lowered to a degree which could not be otherwise tolerated, but is seldom if ever reduced below 80° F. The final, most powerful form of stimulation is the Sprudelstrombad, in which the supply and overflow pipes of the bath tub are left open, so that in addition to the fresh supplies of carbonic acid, the shock of the running water against the body is experienced. These are not given to many patients in their first season at Nauheim. During the entire period of the administration of the baths their effect is watched with the utmost care, and the character of the respiration, condition of the pulse, and sounds of the heart carefully noted; if, after half a minute in the bath and the maintenance of a perfectly quiet attitude, a decided sense of cold persists or afterward recurs, the temperature is too low or the bath is in other respects unsuitable. In fact, if improperly administered, especially if too cold or of too long duration, the baths may not only produce no good effect, but may prove positively injurious

and even dangerous to the patient by increasing instead of diminishing any existing dilatation, and if the Nauheim treatment ever becomes too popularized, and is conducted by incompetent persons, there is much reason to fear disastrous results.

After each bath the patient, having been well rubbed, is usually directed to lie down for about an hour. The food and mode of life are regulated in accordance with the usual requirements for heart patients and the physician's orders. No cardiac tonics are ordinarily given, except in extreme cases at the beginning of the course. An ordinary course of baths at Nauheim is estimated at about twenty-one or twenty-five, extending over a period of four or five weeks. This period is sometimes much lengthened, and not infrequently two courses, separated by a considerable interval, are taken in one summer. After the completion of the course, the patient is recommended before returning to the cares of ordinary life to take an "after-cure" by a sojourn of a few weeks at some quiet, healthful resort possessing a moderately stimulating climate, such as places in the Black Forest, the mountains of North Germany, or localities in Switzerland not exceeding three thousand feet in altitude. The beneficial results of the action of the baths are further greatly increased by means of a series of gymnastic exercises, capable also, when used alone, of powerfully affecting the heart and circulation—the so-called resisted movements—the *Widerstandsgymnastik* of P. H. Ling.

The late Dr. August Schott (who died in 1886) deserves the credit of having brought before the profession their peculiar value, and of having by careful study devised the most suitable methods of their application. Together with his brother, Dr. Theodor Schott, he showed that they formed a most important adjuvant to the baths, and the combined systematic employment of these two remarkable agencies is now usually referred to as "the Schott methods." These exercises are intended to bring into action successively most of the voluntary muscles, and consist of alternate movements of flexion and extension, abduction, adduction, and rotation of the limbs and trunk, such as we are familiar with in ordinary calisthenic exercises or home gymnastics. Against these motions a resistance, graduated in each case to the capacities of the patient, is offered by the physician or a trained attendant. By the interposition of this resistance the muscular contractions are made more complete and energetic, as well as of sufficient slowness and regularity, which last is a matter of prime importance.

The exercises recommended by Dr. A. Schott are as follows:

1. Movements of the extended arms in three directions.

(*a*) From the ordinary position by the sides of the body forward and upward until they reach the temples, and back again.

(*b*) From the same position laterally outward and upward to the temples, and back.

(*c*) From the horizontal position, with the palms of the hands meeting in front of the body, as far apart as possible, and back.

Rotation of the extended arms about their axes as fully as possible, causing pronation and supination.

2. For the elbow, wrist, and finger joints the natural flexions and extensions; radial and ulnar abduction and adduction.

3. (*a*) Flexion of the trunk forward, from a little beyond the erect position, and back.

(*b*) Lateral flexions of the trunk to right and left, and back.

(*c*) Rotations of the trunk on its axis to right and left, and back.

4. Movements of each extended leg forward and upward, outward and upward, backward and upward, and back.

5. The natural flexions and extensions of knee and ankle joints.

A description of these movements and the methods of applying the resistance in full detail, with illustrations, will be found in Dr. Bezly Thorne's larger work (39).

The resistance is always made by the attendant with the palm of the hand in the direction exactly opposite to that of the movement, and in applying it to the wrist and ankle these parts are placed in the fork formed by separating the thumb and fingers; but a limb is never actually grasped, lest support, rather than resistance, should be made.

The degree of force employed should be as much as the patient can overcome without the slightest discomfort, and should be so uniformly applied as to enable him to perform the movements slowly, evenly, and without jerks. He must be able to breathe quietly, and the mouth and alæ nasi must be watched carefully, so that at the slightest indication of loss of breath a pause may be made. Some of the movements may be omitted according to circumstances; the most trying to the patient are the elevation of the arms above the head and the trunk exercises. The limbs are not allowed by the attendant to fall suddenly after the completion of a movement, and a considerable interval of time is always allowed between each one, and is prolonged if the patient seems at all fatigued. The clothing should, of course, be perfectly loose and easy. The exercises are usually given for about half an hour, the series being gone over twice in that time, but they are often employed for shorter or longer periods.

Dr. Schott has also devised a scheme by which the services of the attendant may sometimes be dispensed with.

In carrying out these self-resisted exercises (*Selbsthemmungsgymnastik*), as they are called, the patient endeavors, as it were, to resist his own movements by partially contracting at the same time the antagonistic muscles. This demands some intelligence on his part, and it would be often unsafe to allow its employment.

The action of these exercises is to produce an effect similar in many respects to that caused by the baths; the cold extremities become warm, the sense of oppression in the chest is relieved, and the breathing deepened. The pulse usually becomes fuller, stronger, and slower, and an immediate diminution in the area of dullness of the dilated heart, not due to increased overlapping by the lung, with a simultaneous lessening of the dimensions of the passively congested liver, have been frequently demonstrated. The

effect is often very speedy and striking; an attack of cardiac asthma, according to Dr. A. Schott, which would otherwise continue for hours, may in a few minutes be charmed, as it were, away, and an extreme dilatation be temporarily so completely dispelled that hardly a vestige remains.

The physiological explanation of the effects of these exercises is not altogether easy. It has been suggested by Dr. Schott that what the baths effect through the sensory nerves, the exercises produce through the motor nerves. Dr. Bezly Thorne (39) says: "The motor nerves, called into orderly, regulated, and, above all, not exhausting activity, seem to exercise centripetal and reflex influences similar to those which are brought into action by the baths through the nerves of sensation."

Although there is an undoubted relation existing between the activity of a motor nerve and the nutrition of its corresponding centre, we can hardly look upon it as exerting centripetal influences in the sense that a sensory nerve does. It may be admitted, however, that the action of the motor nerves initiates a series of complex processes in muscle, blood, and nerve by which the heart is reflexly stimulated, though the exact details are difficult to trace.

Sir William Broadbent (9), while not denying the possibility of a nervous influence, is of the opinion that the most important factor is the physiological dilatation of the capillaries in the exercised muscles, which is continued into the arterioles and arteries to allow of the additional supply of blood. At the same time, from the character of the exercises, the compression of the veins which drives on the venous blood to the right heart and gives rise to the dyspnœa attending exertion does not take place. There is thus a transfer of blood from the venous to the arterial system, which is the exact reverse of the tendency attending most forms of heart disease, and so peripheral resistance is lessened. He admits that diminished peripheral resistance is not the only factor, as shown by the fact that the action of the heart is rendered slower instead of being accelerated.

The whole subject is thus tersely summed up by Dr. Theodor Schott: "Unsystematic exercises constitute a heart-weakening, systematic exercises, on the contrary, a heart-strengthening treatment."

The question of the relative value of baths and exercises in each particular case can not be answered with exactness, on account of the varying length of time and degree of force with which the latter are tolerated; but ordinarily the baths which seem to affect the cardiac nutri tion more profoundly are more applicable to severe cases, and their beneficial effect at first is decidedly the greater and more lasting, a result attributed by Dr. Schott to the retention in the skin of the salts of the bath, which pass by imbibition through the epidermis to the corium and continue to exert their action for a considerable period. Later in the course, when the heart has gained strength and the exercises can be repeated with greater force, frequency, and duration, the reverse may be the case. Taken together, the two agencies, as Dr. Bezly Thorne remarks, are capable of producing effects which throw the action of drugs completely into the shade.

Other forms of exercise known to benefit a weakened heart, such as the method of Oertel, the so-called *Terrain-kur*, and the movements by the aid of the Zander machines, which are especially advocated by Dr. Groedel, are employed at Nauheim, where a well-equipped Zander institute has been in operation for the last three seasons. The *Terrain-kur*, however, is too severe a method for many patients who are yet able to undergo with profit the slow, easy, and systematic motions of the resisted exercises, although it may be used with advantage when the heart has gained sufficient power. By the Zander machines the force can be adjusted with the utmost exactness, but can not be so readily altered, while the attendant applying manual resistance can instantly vary the amount of force, according to the changing sensations of the patient and the effects produced.

Let us now consider in some detail what is to be expected from the Nauheim treatment. Although the baths have been resorted to by patients with heart disease for many years in steadily and of late rapidly increasing numbers, the effects obtained there have been but slowly and imperfectly recognized even in Germany. The French, for more or less obvious reasons, have hitherto almost totally ignored them. In this country the papers of Dr. Theodor Schott (29) and Dr. Babcock (1), that have appeared in our own journals, have not as yet created the impression they should have done. Moreover, but brief and casual references are to be found in the text-books. It may perhaps be thought, therefore, that the advantages of the Schott treatment are yet somewhat problematical, and that there is still room for differences of opinion. This is by no means the case. The conclusions reached were not arrived at hastily. It had for some years been gradually becoming evident that the influence of the baths was decidedly tonic, even in cases of heart disease, but it was not until after their effect upon a large number of patients had been carefully studied that Dr. A. Schott ventured to affirm that they exerted not merely a general tonic influence, but constituted, like digitalis, "a tonic of the first order for the enfeebled heart." This remarkable statement was received with considerable incredulity—for example, by Leichtenstern (von Ziemssen's *Handbuch der allgem. Therapie*, Bd. ii, Theil 1, p. 262)—but the further observations of the Drs. Schott (now amounting to over five thousand cases), Dr. Groedel, Dr. Bode, and other Nauheim physicians have proved its absolute accuracy, which has been further corroborated by foreign physicians who have examined into the question on the spot, among whom are such distinguished members of the profession as Professor von Jürgensen, of Tübingen, Dr. Pawinski, of Warsaw, Dr. Moeller, of Brussels, and numerous well-known English medical men. Dr. H. N. Heineman, of New York, made many careful studies during the past summer at Nauheim, which he has repeatedly visited, but beyond a brief notice in a paper published several years ago (*Medical Record*, March, 1890), I am not aware that he has yet published his own observations. Dr. Theodor Schott has frequently demonstrated the immediate alteration in the deep cardiac dullness after both baths and exercises in patients with dilated hearts to the

satisfaction of physicians coming from a distance to visit Nauheim and to learn his methods.

In Great Britain, owing chiefly to the exertions of Dr. Bezly Thorne, the Schott methods, first made known there in 1891, have within the last year or two obtained full recognition, and created an increasing interest, so that the approaching summer will see large numbers of English hastening to Nauheim. It is now a mere question of time when their value will be universally admitted.

The effect of the treatment, then, being to powerfully affect the nutrition and increase the strength of the heart, it may be expected to produce the following results: In fresh endocarditis after rheumatism the baths promote to a high degree the absorption of the inflammatory products and offer hopeful prospects of a more or less complete cure. In chronic valvular disease, where there is serious damage to the valve segments, they can not ordinarily produce the slightest effect upon the injured valve itself, those murmurs which disappear during the course being due to relaxation of the orifices or want of tone in the papillary muscles. Dr. Groedel, of Nauheim, however, states that he has met with a very few remarkable cases presenting evidences of fully developed valvular disease which have been cured at Nauheim, one of which is mentioned in Professor Eichhorst's *Handbuch der speciellen Pathologie und Therapie*, fifth edition, vol. i, p. 56. This patient had all the signs of pronounced mitral insufficiency, and these so entirely disappeared after two seasons at Nauheim that he was accepted as sound by a very strict life-insurance company. At the end of ten years there was still no trace of the disease. Although we can not expect that seriously injured valves should be restored to their normal condition, failure of compensation resulting therefrom is signally benefited, and it is in those cases especially in which digitalis is not tolerated or has not proved useful that the results are so astonishing. It is well known that in aortic regurgitation digitalis is not always beneficial. Good results are secured at Nauheim, however strange it may at first appear, in lack of compensation both from aortic and from mitral disease, as well as in cases of combined disease of both valves and in many instances of patent foramen ovale. The gradual influence exerted upon the nutrition of the heart, without the other accompanying undesirable effects which are often a cause for the failure of medicinal treatment, offers an immense advantage.

In weak hearts without serious organic lesion, from anæmia, chlorosis, and convalescence from acute diseases, and the myocardial affections resulting from influenza, most excellent results are obtained, particularly in young subjects, as well as in cases of heart strain and dilatation due to overexertion. In the chronic sclerotic changes (arterio-sclerosis, chronic myocarditis) of heart and vessels and fatty degeneration, with or without dilatation, so frequent in persons of advancing years, of which the ordinary treatment is usually palliative, the benefit to be derived is naturally more uncertain and generally requires long and persistent treatment. Some of the most remarkable results of the Schott methods, however, have been ta ined in apparently otherwise hopeless cases, and even patients suffering from angina pectoris have been practically cured at Nauheim. It is easy to say with Professor Huchard (*Traité clinique des maladies du cœur et des vaisseaux*, second edition, p. 420) that these are cases of pseudo-angina, but there is no doubt that cases presenting all the clinical features of true angina pectoris due to organic disease have been relieved at Nauheim. It would, of course, be absurd to state that such irreparable lesions as calcified coronary arteries or advanced fatty degeneration, which are often associated with the disease, could be affected by the Nauheim treatment, and, while many cases of angina pectoris are hopeless under any circumstances, yet the effect of the Nauheim baths upon the cardiac nutrition is so remarkable that where the lesions are not too far advanced or only commencing the results of the treatment are eminently gratifying. The fact is, as Balfour well points out (*The Senile Heart*, pp. 116 *et seq.*), that the expression pseudo-angina is often misleading, and should not be applied to cases presenting symptoms identical with those of true angina, merely because the heart lesion happens to be curable. Such cases it is often impossible to distinguish from the incurable ones, and Balfour consequently expresses himself in regard to the prognosis that this is often more hopeful than we should at first be led to suppose. In Dr. Th. Schott's paper (27) four striking cases are given as illustrative of his large experience.

The results in cases of heart disease dependent upon or complicated with disease of the kidney are less encouraging and more variable, but albuminuria due merely to secondary renal congestion may altogether disappear. Cases of functional nervous disturbance of the heart are usually, but not always, benefited.

The contraindications to the Nauheim treatment are advanced arterio-sclerosis and aortic aneurysm. Patients with the latter affection have used the baths with some alleviation of symptoms, but on account of the danger of raising the blood pressure these must be employed with the greatest caution. Many very serious cases of heart disease come to Nauheim, and, as is only to be expected, some deaths occasionally take place during the season; but such is the care taken by the local physicians, who write their orders with exact directions, that fatal accidents directly attributable to the baths are practically unknown. Groedel states that during a practice of many years at Nauheim he has never had a case of sudden death during the bath, although he has known of two cases of apoplexy which occurred during the exertion of dressing.

As to the exact length of time required for a cure, it is, of course, impossible to say; improvement is usually observed after a week or two, and some patients are relieved by a single course, but many others require a much longer period, and there are comparatively few who are ill enough to undertake a long journey to Nauheim in search of relief for whom it is not advisable that they should return for another or several successive seasons, while in some desperate cases the treatment will necessarily fail.

During a stay of a month at Nauheim last summer I was enabled to acquaint myself with the details of the administration of baths and exercises, to note their effect upon

the pulse, and to personally test the former, including the *Sprudelstrombad*. I had also time to become familiar with the general life of the place and to learn how universally it was recognized that good results were to be expected in patients with heart disease, who were undergoing treatment there in large numbers.

The individual cases I had opportunity to examine were few in number, but several were such as to afford convincing illustrations of the value of the treatment, if any such were needed after the carefully reported cases that are already to be found recorded in various publications.

Case I.—Captain von H., aged forty-six years, seen by the kindness of Dr. Schott. The patient, a large, strongly built, fine-looking man, had suffered repeatedly from rheumatism, his first attack having occurred many years before. He was found to have aortic regurgitation, and, having obtained but little relief from his symptoms, and not being able to bear digitalis well, came to Nauheim in 1892 in very bad condition, as he stated, with intermittent pulse, scarcely able to walk more than a few steps, and entirely incapacitated for the discharge of his duties, but without dropsy. When I saw him, on July 24th, he was just completing his fourth course at Nauheim.

The treatment the first year began with thermal baths of very short duration, and each successive year more powerful ones had been taken, so that the present season he had been taking Sprudel baths entirely. With the baths the exercises had been administered, as he thought, with marked benefit. On examination I found the heart enlarged, with apex beat diffused, but quite devoid of heaving character. No noticeable pulsation in the arteries of the neck. There was a distinct diastolic murmur in the aortic area, with the characteristic pulse of aortic regurgitation, which was, however, quiet and regular. He complained still of slight præcordial pain, but since he had been coming to Nauheim had been relieved of his former symptoms and enabled to take exercise, sometimes of a very vigorous character. He presented a healthful appearance and compensation was practically perfect.

Case II.—Mr. C., aged fifty-three years, a native of Denmark, and a resident of British India, a sufferer from angina pectoris, for seeing whom I am also indebted to Dr. Schott. The patient, a stout, rather short man of sallow complexion, had experienced attacks of varying severity, sometimes slight, sometimes very extreme, for two years and a half. The pain extended down the left arm, which it had rendered numb and helpless. Nitroglycerin and nitrite of amyl had been used with good effect, but had proved merely palliative. The patient was also suffering with a congested liver. He had been recommended, I believe, by Dr. T. Lauder Brunton to go to Nauheim. He began treatment on the 31st of May under Dr. Schott, who considered his heart to be affected with incipient fatty degeneration, accompanied with some degree of dilatation. Beginning with a thermal bath of 32·5° C. (90·5° F.) temperature and eight minutes' duration, these were continued until fourteen had been taken, the duration gradually prolonged up to seventeen minutes' and the temperature reduced 1° C. Beginning with the sixth bath, one litre of "*Mutterlauge*" was added, which was increased up to three litres.

On June 19th Sprudel baths were begun, of at first eight minutes' duration, which were finally prolonged to twenty minutes, and the temperature reduced as low as 28° C. (82·4° F.).

From the 23d of July, for the remainder of the course, the Sprudelstrombad No. 7 (temperature, 88·8° F.) was taken, at first for eight minutes, afterward for gradually lengthened periods. Every fourth or fifth day during the course, or occasionally the third day, the bath was omitted. In all more than forty baths were taken. The patient commenced to take the exercises about two weeks after beginning the baths, and also used one of the drinking springs for its effect upon the liver. After the first week at Nauheim he was able to abandon the use of nitroglycerin, and at the time of my interview with him (July 26th) had had no pain for a couple of weeks. On examination the apex beat could not be felt, but the heart sounds were all normal, though somewhat weak. The heart dullness, as well as could be ascertained in so stout a person, was normal. Pulse regular, rather weak, and easily excited. Superficial arteries not sclerosed. The liver had regained its normal size. The patient left in excellent condition on August 8th in a cheerful frame of mind, greatly impressed by his personal experience of both baths and exercises.

This remarkable case was also examined with interest by several other physicians stopping in Nauheim at the time.

Case III.—Mrs X., a patient in middle life, for more than three years suffering from a badly nourished and overstrained heart.

The symptoms in their most extreme form consisted in inability to make the slightest exertion, with occasional dangerous attacks of syncope, necessitating subsequent entire rest for weeks and even for months at a time. Digestive power was very feeble, and medicinal treatment was not well tolerated and was comparatively ineffective. On arriving at Nauheim she was just beginning to improve after a series of alarming attacks of heart failure. Examination showed the left ventricle dilated and the apex beat barely perceptible in the nipple line or somewhat outside. Cardiac sounds very feeble, but clear (at times a faint systolic murmur had been noted), and pulse excessively weak. Complexion pale. The patient at this time could walk with difficulty for about a hundred yards on a level. Treatment began July 13th with a thermal bath from spring No. 7; temperature, 34° C. (93·2° F.); duration, eight minutes; July 14th, bath of nine minutes; July 15th, no bath; July 16th, bath of ten minutes; July 17th, bath of eleven minutes; July 18th, bath of twelve minutes; July 19th, no bath. On July 18th patient felt distinctly better, and apex beat had receded about half an inch nearer to median line. July 19th: Began the exercises given by a trained operator with very gentle resistance for about half an hour, including pauses. The effect was good, causing slight increase of warmth and deepening the breathing. The course of baths was continued, one litre of "*Mutterlauge*" being added, and the temperature reduced 0·5° C. on July 20th, and by August 7th three litres had been added, the temperature lowered to 32·5° C., and the time extended to twenty minutes. At the beginning of August the patient's progress was unfortunately impeded for a few days by an acute illness accompanied with moderate fever, so that three baths which would otherwise have been taken were omitted. The effect of the last baths, cooler and of long duration, was not so striking as that of the previous ones, the patient experiencing some sensations of fatigue and chilliness. August 9th: Sprudel baths of No. 12, of natural warmth (95·5° F.), with the full amount of carbonic acid, were commenced, beginning with a length of eight minutes, which had been extended to fifteen when the last was taken. These Sprudel baths seemed to impart to the patient a fresh impulse and improvement was again rapid. After a stay at Nauheim of nearly six weeks, during which about fifteen simple thermal baths and nine Sprudel baths were taken, the

patient left, not cured, but in a greatly improved condition, still unable to walk upstairs without support, but able to walk comfortably on a level more than half a mile, as well as to exert herself in ways previously impossible, a striking and satisfactory result considering her wretched condition on arrival.

I was also able to closely watch the treatment and its effects in two patients, over sixty years of age, in whom the symptoms were not very urgent, and, although some improvement was evidently effected, the results, as might have been expected in such cases in so short a time, were not very striking.

The first, in whose somewhat enlarged heart systolic murmurs at base and apex, attributed to sclerotic changes in the valves, were audible, and who suffered with attacks of angina, not of great severity, but sufficient to occasionally necessitate stopping short in the street, shortness of breath, feeble and sometimes intermittent pulse, and functional disorder of the liver, but who was able usually to take moderate walking exercise, took fourteen thermal baths of No. 7 and seven Sprudel, No. 7, beginning with a temperature of 32·5° C. (90·5° F.) and a duration of ten minutes. The gymnastic exercises were also given for half an hour every day, within a day or two after commencing the baths. They improved the breathing, giving a comfortable sense of relief in the chest, but did not slow the pulse more than a few beats. When lying down immediately afterward, the pulse would sometimes intermit for a short time, but the general effect was evidently beneficial. I examined this patient with a view to ascertaining any immediate diminution in the area of cardiac dullness after a thermal bath and after the exercises, but was unable to satisfy myself that there was any decided alteration. On leaving, the patient had less frequent attacks of pain and had otherwise somewhat improved. The good effects of the treatment seemed to be felt even more after leaving Nauheim. The cardiac murmurs still persisted.

The second of these patients, subject to gout and rheumatism, and possessing a weak and badly nourished heart, was affected with moderate tachycardia without other positive evidences of disease, the pulse-rate reaching 100 even when the patient was quietly resting, and giddiness was complained of on lying down at night. The patient, who was anæmic, was given a preparation of iron, and, beginning with a temperature of 34° C. (93·2° F.) and length of eight minutes, took sixteen thermal baths of No. 7 and six Sprudel baths of No. 12. A few days after beginning the baths the exercises were commenced and given for half an hour daily and were well tolerated, the pulse-rate immediately after either remaining about the same or rendered less rapid. At the completion of the course, though the frequency of the pulse was not materially diminished, its character was improved; the heart was evidently strengthened, the giddiness relieved, and, in the patient's own opinion, good had been accomplished.

The following case, among those reported by Dr. Bezly Thorne (38), is of so much interest that I venture to quote the greater part of his account:

A woman, fifty-two years of age at the present time (1894), and the subject of inveterate lithæmic tendencies, rapidly developed in the winter of 1891–'92 a loud, rasping, basic systolic bruit, which was accompanied by a systolic apex souffle. Her health rapidly failed, and the cardiac condition, involving as it did loss of sleep and appetite and steadily increasing dyspnœa, threatened to bring her life to a close. All ordinary resources having failed to afford relief, I suggested recourse to the Nauheim baths and treatment by exercises, with the practical details of which I was then unacquainted. The journey, however, appeared to involve such serious risk that I did not venture to authorize it; but as Dr. Hermann Weber came to the conclusion that it probably afforded the only remaining chance of life, it was decided to undertake it. The distance from the English coast to Mainz-on-the-Rhine was covered by steamer. When again seen in the following October the patient was restored to her former measure of health and pursuing her usual avocations.

In May, 1893, she returned to Nauheim for a second course, and on her return I was unable to detect either the basic or apex bruit, and the heart was fully competent.

A few words of general information for the traveler and invalid may be added. The hotels furnish good accommodation, and are most of them provided with lifts, a matter of much importance for heart patients. They are apt to be very full in the height of the season, and it is almost impossible to obtain rooms at the Kaiserhof in particular, which is now being altered and enlarged, without securing them weeks or even months beforehand. The villas, which are very numerous and usually stand in the midst of small grounds, are large, spacious, and well managed, the food and cooking being essentially German in character. Arrangements should be made beforehand as to whether board is to be provided or not, as many will prefer to take one at least of their meals at one of the hotels. Rolling chairs are to be hired by the week at reasonable prices, as well as attendants to push them.

All ordinary articles likely to be needed can be obtained in the town; others can be quickly sent from Frankfort. The summer climate of Nauheim, like that of the other Taunus resorts, is somewhat changeable, often cold and rainy, but seldom oppressively hot. The soil is good, and the position of the town favorable for health.

The place is furnished with a water supply and a system of drainage said to be good, but the sanitary conditions are probably susceptible of some further improvement. Although the surrounding country is less attractive than at many other resorts, there are walks, drives, and excursions of much interest for those who are able to undertake them. The Kurhaus is large and handsome, and furnishes the usual means of recreation. Subscriptions have been already taken for an English church, and a piece of land secured upon which one will probably soon be built. The official season at Nauheim lasts from the 1st of May to the end of September, but the bath houses are open also in April and October.

Bibliography.

1. Babcock, Robert H. The Schott Method of Treating Chronic Diseases of the Heart by Baths and Gymnastics. *Journal of the American Medical Association*, November 11, 1893.

2. Babcock, Robert H. A Report of Cases of Heart Disease Treated by the Schott Method of Baths and Gymnastics. *New York Medical Journal*, December 8, 1894.

3. Beneke, F. W. *Ueber Nauheim's Soolthermen*, etc., Marburg, 1859.

4. Beneke, F. W. *Weitere Mittheilungen über die Wirkungen der Soolthermen Nauheims*, Marburg, 1861.

5. Beneke, F. W. Nauheim's Soolthermen gegen Gelenkrheumatismus mit oder ohne Herzaffection. *Berl. klin. Wochenschr.*, No. 22, 1870.

6. Beneke, F. W. *Zur Therapie des Gelenkrheumatismus und der ihm verbundenen Herzkrankheiten.* Berlin: Hirschwald, 1872.

7. Beneke, F. W. Neue Erfahrungen über die Wirkungen der kohlensaürehaltigen Soolthermen Nauheims, etc. *Berl. klin. Wochenschr.*, Nos. 9 and 10, 1875.

8. Bode, W. *Bad Nauheim, seine Curmittel, Indicationen und Erfolge*, zweite Aufl., Wiesbaden, 1889 (translated into English).

9. Broadbent, J. F. H. On Treatment of Chronic Heart Disease by the Methods of Dr. Schott, of Nauheim. *The Practitioner*, May, 1895.

10. Fisher, T. The Treatment of Heart Disease. *The Hospital*, August 24, 1895.

11. Groedel, J. Ein Beitrag zur Behandlung der Lähmungen bei Apoplektikern mit Herzfehler. *Berl. klin. Wochenschr.*, No. 10, 1878.

12. Groedel, J. Pneumatometrische Beobachtungen über den Einfluss verschiedener Bäder auf die Respiration. *Berl. klin. Wochenschr.*, No. 20, 1880.

13. Groedel, J. Zur Behandlung Herzkranker. *Berl. klin. Wochenschr.*, No. 25, 1883.

14. Groedel, J. Die Behandlung der chronischen Herzkrankheiten in Bad Nauheim. *St. Petersburger med. Wochenschr.*, No. 16, 1893.

15. Groedel, J. The Mechanico-gymnastic and Balneotherapeutic Treatment of Chronic Cardiac Disorders. *Lancet*, March 30, 1895.

16. Israel, E. *Om Nauheimkur*, etc., Copenhagen, 1891.

17. Moeller. *Du traitement des maladies du cœur par la méthode des Drs. Schott de Nauheim*, deuxième édition, Bruxelles, 1893.

18. Pagenstecher, G. *Du traitement balnéo-mécanique des maladies chroniques du cœur d'après la méthode des Docteurs Schott* (de Nauheim). *Bulletin général de thérapeutique*, 15 et 30 juin 1894.

19. Saundby, Robert. *Birmingham Medical Review*, vol. xxxviii, No. 208, 1895.

20. Schott, A. Die Wirkung der Bäder auf das Herz. *Berl. klin. Wochenschr.*, 1880, No. 20.

21. Schott, A. Zur Therapie der chronischen Herzkrankheiten. *Berl. klin. Wochenschr.*, No. 33, 1885.

22. Schott, A. Bedeutung der Gymnastik für Diagnose, Prognose und Therapie der Herzkrankheiten. *Zeitschr. für Therapie*, 1885.

23. Schott, A. und Th. Die Nauheimer Sprudel und Sprudelstrombäder. *Berl. klin. Wochenschr.*, No. 19, 1884.

24. Schott, Th. Beitrag zur tonisirenden Wirkungen kohlensäurehaltiger Thermalsoolbäder auf's Herz. *Berl. klin. Wochenschr.*, No. 28, 1883.

25. Schott, Th. Die Hautresorption und ihre Bedeutung für die Physiologie der Badewirkungen. *Deutsche Med.-Zeitung*, 1885.

26. Schott, Th. *Die Behandlung der chronischen Herzkrankheiten.* Berlin: Grosser, 1887.

27. Schott, Th. Zur Pathologie und Therapie der Angina pectoris. *Deutsche Med.-Zeitung*, 1888, Nos. 35 to 38.

28. Schott, Th. Zur acuten Ueberanstrengung des Herzens und deren Behandlung. *Verhandlung des IX. Congresses für innere Medicin zu Wien*, 1890.

29. Schott, Th. Balneo-therapeutics and Mechano-therapeutics applied to the Treatment of Chronic Heart Disease. *Medical Record*, No. 7, vol. xxxix, 1891.

30. Schott, Th. The Treatment of Chronic Diseases of the Heart by Means of Baths and Gymnastics. *Lancet*, May 23 and 30, 1891.

31. Schott, Th. Zur Differentialdiagnose des Pericardialexsudats und der Herzdilatation. *Berl. klin. Wochenschr.*, No. 18, 1891.

32. Schott, Th. Ueber Herzneurosen. *Real. Encycl. der gesammten Heilkunde*, 1892.

33. Schott. *The Mineral Waters of Nauheim; their Action, Uses, and Effects.* London: Eyre & Spottiswoode, 1894.

34. Schott, Th. Zur Behandlung des Fettherzens. *Deutsche med. Wochenschr.*, xx, 561, 1894.

35. Smyly, Sir Philip C. On the Treatment of Enlarged Heart by Certain Movements, as Taught by Dr. Th. Schott, of Bad Nauheim. *Dublin Journal of Medical Science*, September, 1894.

36. Sturge, W. Allen. Note on the Treatment of Dilated Heart as Practised at Nauheim by Dr. Schott. *British Medical Journal*, March 9, 1895.

37. Summers, Guillermo. Tratamiento de las Enfermedades Crónicas del Corazon por el Metodo del Dr. Schott. *Gaceta médica de Cadiz*, 1893.

38. Thorne, W. Bezly. *The Treatment of Chronic Diseases of the Heart by Baths and Exercises according to the Method of the Drs. Schott.* London: J. & A. Churchill, 1894.

39. Thorne, W. Bezly. *The Schott Methods of the Treatment of Chronic Diseases of the Heart.* London: J. & A. Churchill, 1895.

40. Thorne, W. Bezly. The Treatment of Chronic Affections of the Heart by Baths and Exercises. *British Medical Journal*, March 9, 1895.

41. Wethered, F. J. The Treatment of Chronic Diseases of the Heart by Baths and Gymnastics as Practised at Nauheim. *British Medical Journal*, November 10, 1894.

42. Wiborgh, Aug. *Bad Nauheim*, etc., Stockholm, 1888.

THE X-RAY DETECTION OF DEFORMITIES OF BONES.

By WILLIAM JAMES MORTON, M.D.

The two accompanying Röntgen pictures of a local area of the bones of the feet of two patients are submitted, not because they are as clear or as well defined as others taken by the writer, but because they happen to illustrate the detection of deformities of bones, and to point out the value of comparison between normal and abnormal tissues by the radiographic method. It is questionable if the mere inspection of the shadow cast upon the fluoroscopic screen, as proposed in its medical applications by Edison, valuable as this method will undoubtedly prove to be in many instances, would have indicated to any but a skilled observer the fact that in Fig. 1 the metatarsal and the first phalanx of the great toe were enlarged, and consequently the seat of disease. But by reference to Fig. 2 these facts are at once clear. Again, upon examining the print of Fig. 2 it is seen that an enlargement of the bone exists upon the shaft of the third metatarsal. Here also, if any doubt existed, it would be dispelled and the certainty of the diagnosis be augmented by comparison with the clearly defined shaft of the same bone in Fig. 1.

The pictures here presented are, as has been said, of different persons. The cases are briefly as follows:

Case I (Fig. 1, left foot).—F. E. S., aged eighteen years, was brought to me by her father, who made the following statement: In September last the young lady accidentally struck her foot against some large splinters on a rough board and felt a sudden pain. Upon examination she found that the wood had penetrated the shoe and the ball of the foot. The foot was operated upon and two large splinters were removed, but without relief from pain and great suffering, which have been continuous ever since; she walks very lame and can not touch the affected portion of the foot to the ground.

The father's expectation was that the X ray might reveal one or more splinters of wood not removed at the operation. The fallacy of this hope was explained to him.

March 27th.—The picture was made in fifteen minutes, and upon developing the negative the enlargement of the bone as shown was evident, and more especially so upon comparison with the normal bone in the other picture. The patient is under the care of Dr. H. De H. Cameron, of Brooklyn.

Case II (Fig. 2, left foot).—N. P., aged twenty-two years, was brought for me to take a Röntgen picture of by Dr. E. S. Newell, of Mount Vernon, N. Y., who stated that the patient had accidentally forced a needle into the ball of the foot in August, 1895. She visited a physician the next day, but he was unable to ascertain its situation. She has been lame more or less ever since. Dr. Newell has been unwilling to operate on account of the difficulty of determining the exact locality of the needle.

March 27th.—The Röntgen picture was made.

In the negative a faint line indicating the site of the needle may be traced, running obliquely almost across the metatarsal bone, but this line does not show distinctly in the print. The picture clearly indicates an enlargement of the bone, and will undoubtedly serve as an accurate guide for an operation. However, a second picture will be taken in such a manner as to penetrate the bone to a greater extent, and thus it is hoped give a better view of the needle, or at least of oxidized remains, which, in the case of steel, seem to be black in color and dense to the X ray.

It is remarkable how much more information the negatives give than the prints do, especially, as has been pointed out, by comparison with other negatives of similar tissues. And not only is the negative superior to the print, but also both are superior, for diagnostic purposes, so far as I can judge from actual practice, to the fluoroscopic representation. For these reasons, as well as in view of the value of a permanent record, I am of the opinion that the photographic process can not be displaced by the more transient and probably less accurate fluoroscopic method. However, any opinion is yet premature in an art which, chameleon-like, changes its phases from day to day.

SOME FACTS CONCERNING NUCLEINS,

WITH OBSERVATIONS ON SOME COMMERCIAL PRODUCTS.

By R. H. CHITTENDEN, Ph. D.,

PROFESSOR OF PHYSIOLOGICAL CHEMISTRY IN YALE UNIVERSITY.

During the last few years much attention has been paid to the study of nucleins and nucleoalbumins or nucleoproteids, and there has been a growing conviction that these bodies, which are now known to be widely distributed in Nature, play an important part in the life history of the animal cell and consequently in the life history of the organism. Chemists, physiologists, and morphologists are alike interested, while the pharmacologist also may naturally feel some interest, owing to the growing belief that these bodies have important therapeutic action in certain abnormal or diseased conditions of the system. Much confusion exists, however, in regard to the exact meaning of the term nuclein and its relationship to the kindred terms nucleoalbumin, nucleoproteid, and nucleic or nucleinic acid. The same confusion exists in regard to the substances described under the above-mentioned names.

Originally, the term nuclein was applied to a peculiar phosphorized substance isolated from the nucleus of pus cells, and which apparently made up the greater portion of the nucleus.* Later, it was discovered that this, or related substances, was widely distributed through Nature in both the animal and vegetable kingdoms, wherever nucleated cells occurred. At this period it was generally assumed that nuclein existed as such in the nucleus of the cells, but chemical analysis soon revealed the fact that the amount of phosphorus contained in the products isolated from various sources was exceedingly variable, thus suggesting that the processes of separation might have caused a certain amount of cleavage or decomposition of more complex molecules resident in the cell, of which the isolated nuclein was only a part. This, indeed, later investigation proved to be the case in many instances, and chemists soon came to look upon nuclein as a purely artificial product resulting from the breaking down of complex semi-proteid molecules, especially characteristic of nuclear protoplasm. This view, however, is not wholly correct, since some nucleins unquestionably exist as such in the cell nucleus. It has finally become evident, however, that there are a large number of more or less closely related nucleins — phosphorized, proteidlike bodies—some being simple cleavage products of more complex nucleoproteids, while others exist either as such or as closely allied bodies in the caryoplasm of cell nuclei.

The discovery by Kossel that nuclein, such as is obtained from yeast cells and from many animal tissues, yields on decomposition with dilute sulphuric acid not only phosphoric acid but also a number of crystalline nitrogenous bases, such as adenine, guanine, xanthine, hypoxanthine, etc. —the so-called nuclein bases—opened a way for the more critical study of nucleins, and soon led to a recognition of the existence of at least two distinct groups of these bodies —*i. e.*, those which on cleavage with dilute sulphuric acid yield nuclein bases (true nucleins), and those which do not yield such crystalline decomposition products (false nucleins or paranucleins). As a typical member of the latter group may be mentioned the nuclein which results from the action of gastric juice upon the nucleoalbumin, or casein, of milk. The latter body is a nucleoalbumin containing 0·85 per cent. of phosphorus, but on digestion with gastric juice the greater portion of the proteid part of the molecule is converted into soluble matter, while an insoluble nuclein results with a variable amount of phosphorus, but frequently containing 2·5 per cent. of this element. This nuclein,

* Hoppe-Seyler and Miescher. *Med.-chem. Untersuchungen*, p. 452.

however, does not yield any nuclein bases on boiling with dilute sulphuric acid, as do most of the nucleins obtainable from cell nuclei—*i. e.*, it is a paranuclein.

A still more important fact bearing upon the inner nature of the so-called nucleins, and which in the hands of Kossel and his coworkers became the means of partially clearing up the mystery of these bodies, is their reaction. They are all acid bodies, of weak acidity to be sure, and with a varying degree of acidity, but the latter sufficiently marked to suggest the presence of acid radicles of some kind. This fact led to the discovery of nucleic or nucleinic acids, bodies readily obtainable from all nucleins by the action of dilute alkalies, the latter serving to break up the combination existing between the acid and the albuminous matter with which it is naturally combined. A nuclein is thus seen to be simply a combination of some form of proteid matter with a nucleic acid. Nucleic acid may be prepared from any form of nuclear material, preferably, however, from yeast cells, as originally described by Altmann.* The process is simple, and illustrates how readily nucleic acid may be split off from its combined proteid matter. If yeast cells are mixed with about three per cent. sodium hydroxide, the dissociation of the nuclein will be effected in a few minutes at the room temperature, and on nearly neutralizing the solution with hydrochloric acid and adding an excess of acetic acid, the albuminous matter is precipitated; while from the filtrate the nucleic acid may be separated by addition of hydrochloric acid until the acidity reaches 0·3 to 0·5 per cent. HCl, followed by the addition of an equal volume of alcohol. Several reprecipitations may be required to obtain anything like a pure product.

Nucleic acid is an amorphous white powder of strong acid reaction, readily soluble in water containing a small amount of alkali; insoluble in alcohol and ether. From an alkaline solution it is not precipitated by excess of acetic acid, but is readily thrown down by a slight excess of hydrochloric acid, especially in the presence of alcohol. Particularly noteworthy is the fact that nucleic acid in acid solution yields with albuminous bodies precipitates having the general character of nucleins. In composition, nucleic acid is characterized by its large percentage of phosphorus, as much as nine per cent. of this element having been found in some forms of this acid. Kossel maintains that in all nucleic acids the nitrogen and phosphorus are present in the proportion of three to one. It is thus evident that the phosphorus so characteristic of all nucleins belongs to the contained nucleic acid, and indeed may be taken as a measure of the content of nucleic acid. Further, a study of the cleavage products of nucleic acid—as obtained from yeast, for example—shows that the peculiar nuclein bases formed in the decomposition of nucleins are likewise derived from the contained nucleic acid; hence we arrive at the conclusion that the typical element of all nucleins and nucleoalbumins or nucleoproteids is the contained nucleic acid. There must, however, be some variation incidental to variations in the character of the combined proteid matter, which in turn may give some individuality to the nucleins or nucleoproteids, but it is quite evident that the chemical characteristics of nucleins centre chiefly around the contained nucleic acid.

We are naturally led to consider next what variations exist in the character of nucleic acid; whether only one acid of this type occurs in Nature, or whether there are a row of bodies having certain general features in common, but with some specific differences. The nucleic acid prepared from yeast was found by Kossel to yield on cleavage four distinct nuclein bases; but the nucleic acid obtainable from the thymus glands of calves yields on boiling with dilute sulphuric acid only one base—viz., adenine; hence Kossel gives to this particular nucleic acid the specific name of adenylic acid. Further, the nucleic acid obtainable from the sperm of steers yields on cleavage mainly xanthine. Hence Kossel considers that there are at least four distinct nucleic acids, each one characterized by yielding one particular nuclein base. These acids may be appropriately named adenylic acid, guanylic acid, xanthylic acid, etc., according to the nature of the base formed, as suggested by Kossel. This view being correct, it is furthermore obvious that any form of nucleic acid which yields two or more bases must consist of a mixture of these related acids. Another fact which implies the existence of even a greater variety of nucleic acids is found in the presence of carbohydrate groups in some acids, which are wholly wanting in others. Thus, from the nucleic acids contained in the pancreas, mammary gland, and yeast cells, a reducing carbohydrate may be separated, and from the acid of the thymus gland lævulinic acid has been obtained. In the nucleic acid of fish sperm, on the other hand, no carbohydrate groups can be detected. Again, there are some forms of nucleic acid which fail to yield any nuclein bases on decomposition, bodies which we may group together under the head of paranucleic acids, as suggested by Malfatti. This, presumably, is the form of nucleic acid present in the so-called paranucleins or pseudo-nucleins.

It thus becomes evident that the nucleoproteids, so widely distributed through Nature in all vegetable and animal cells, are combinations, in varying proportions, of different forms of nucleic acid with albuminous or proteid substances. I use the word proteid here in a generic sense, including any and all forms of albuminous matter, either simple or compound, and not limited to a few compound bodies, such as the mucoids, mucinoids, etc., as is done by Hammarsten and some other writers. Similarly, I see little to be gained in attaching any special significance to the two terms nucleoalbumin and nucleoproteid, as suggested by Hammarsten. Indeed, to my mind, the suggestion, if followed, will only lead to increased confusion and probable misinterpretation. Thus, Hammarsten* would limit the term nucleoalbumin to such bodies as yield a paranuclein on digestion with gastric juice—*i. e.*, to such bodies as the casein of milk, etc.; while the term nucleoproteid he would restrict to such compounds as yield a true nuclein by pepsin-acid digestion—*i. e.*, a nuclein which gives nuclein bases on further decomposition. It would

* Du Bois-Reymond's *Archiv f. Physiol.*, 1889, p. 524.

* *Zeitschr. f. physiol. Chem.*, Band xix, p. 19.

seem to the writer, however, that the two terms nucleoproteid and nucleoalbumin would in themselves imply that any differences between the two bodies must be associated with the proteid or albuminous portion of the molecule. But this is plainly not the case, for the essential difference lies in the fact that one class of bodies yields a nuclein which does not give nuclein bases on further decomposition, while the other class yields a true nuclein from which nuclein bases can be obtained. In other words, the difference between these two classes of bodies is to be associated with the character of the nucleic acid contained in the molecule. This being so, it seems wholly misleading to attach one meaning to the term nucleoproteid and another meaning to the term nucleoalbumin. It would, indeed, be better to drop the latter term altogether, making the broader term nucleoproteid answer for all compounds of this class, or to use the term nucleoalbumin simply as a synonymous term. On the basis of our present knowledge, we may perhaps make a division of nuclein bodies into the following groups:

1. Nucleic acids, bodies rich in phosphorus, which contain no proteid matter, and yield on decomposition only phosphoric acid, nuclein bases, and sometimes carbohydrate bodies. They may occur free in some animal cells, as in spermatozooids, but are more generally united with more or less proteid matter. To this group may be added paranucleic acid, which, however, must have a widely different constitution, in that it does not yield any nuclein base on decomposition.

2. True nucleins, such as are present in cell nuclei, either as such or joined to proteid matter as a part of more complex molecules (nucleoproteids), containing variable amounts as well as variable kinds of nucleic acids, and yielding by decomposition proteid matter, nuclein bases, and phosphoric acid.

3. Paranucleins, obtainable especially from nucleoproteids with a low content of phosphorus, such as are present in the cytoplasm of the cell, in egg yolk, and in milk. Paranucleins yield on decomposition proteid matter and phosphoric acid, but little or no nuclein bases—*i. e.*, they are compounds of proteid matter with a small amount of paranucleic acid.

4. Nucleoproteids or nucleoalbumins, phosphorus-containing proteids, widely distributed through all animal cells, and which by pepsin-acid digestion yield soluble proteid products and true nuclein, the latter giving on further decomposition nuclein bases.

5. Paranucleoproteids, phosphorus-containing proteids, which by digestion with pepsin acid yield insoluble paranuclein, together with soluble proteoses and peptones.

Unquestionably, the members of these different groups range into each other by almost insensible gradations. Further, many of the nucleoproteids, with a low content of phosphorus, are hard to distinguish from true globulins, and frequently it is only by a determination of the presence or absence of phosphorus that a definite conclusion as to the true nature of the body can be reached.

The properties and general characteristics of the nucleoproteids and nucleins depend, as has been stated, mainly upon the amount and character of the nucleic acid united to the proteid matter. Further, in the majority of the tissues of the body nucleoproteids with some paranucleoproteids are mainly met with, these bodies being especially abundant in the caryoplasm and cytoplasm of the cells, nucleins and free nucleic acids being less abundant. From all nucleoproteids, however, nuclein and nucleic acid can be prepared by proper methods of treatment. The larger the proportion of nucleic acid in the nucleoproteid or nuclein the more acid its character, and the chief difference between a nuclein and a nucleoproteid is found in the proportion of nucleic acid to the proteid matter. Hence, digestion of a nucleoproteid with gastric juice naturally gives rise to a nuclein, since the proteolytic action of the digestive enzyme results in a solution of the superfluous proteid matter. Variations in the amount of nucleic acid and proteid matter in a nucleoproteid obviously affect the ordinary reactions of the body, notably its solubility, etc. Nucleoproteids and nucleins rich in phosphorus are more likely to be found associated with the nuclei of cells, while nucleoproteids with a small amount of phosphorus are more abundant in the cell cytoplasm.

If we examine the composition of a few of the nucleoproteids and nucleins that have been separated from different tissues and organs, we gain a very clear idea of the great variation in the proportion of nucleic acid and proteid matter in these compound bodies. Thus, the peculiar nucleoproteid separated by Hammarsten from the pancreas contains 4·48 per cent. of phosphorus; the nuclein of yeast cells Kossel found to contain about 6·19 per cent. of phosphorus; the nuclein of egg yolk, according to Bunge, contains 5·19 per cent. of phosphorus; the peculiar nucleoproteid (nucleohiston) separated by Lilienfeld from the nucleus of lymphocytes contains 3·02 per cent. of phosphorus; while in the cytoplasm of leucocytes from the thymus and lymph glands the same investigator found only 0·43 per cent. of phosphorus. Probably the great majority of the organs of the body contain nucleoproteids with a comparatively small percentage of phosphorus. The nucleoproteid obtained from red marrow by Halliburton and Forrest, however, contains 1·6 per cent. of this element, and from the liver a nucleoproteid has been separated with 1·45 per cent. of phosphorus. From the brain a nucleoproteid has been obtained with 0·5 per cent. of phosphorus, while in the kidney there is present a nucleoproteid with only 0·37 per cent. of phosphorus.

The growing belief that nucleins have important therapeutical action has led to the widespread use of preparations containing these substances, and it may not be amiss, therefore, to consider briefly the composition of a few of these products. In some cases the method of manufacture has apparently had for its object the separation of a pure nuclein or nucleic acid, freed so far as possible from all other cell or tissue constituents, as in the "nuclein solution, standard, formula of Dr. John Aulde," which is "made from thyreoid and thymus glands," and in the "improved nuclein solution" manufactured by Parke, Davis, & Co., which is stated to be a "pure nucleinic acid from yeast." In the preparation known as "protonuclein," on the other hand, the process of manufacture is stated to

consist "in the mechanical separation of the cellularly active constituents" of various lymphoid structures and glands, the product presumably consisting of the entire contents of the cells, and hence composed not only of the nucleins and nucleoproteids naturally present there, but also of considerable other material belonging to the substance of the cells.

Taking the amount of phosphorus contained in these products as an index of the proportion of nucleoproteid or nucleic acid present, we may draw some inferences as to the character of these pharmaceutical preparations. A sample of "nuclein solution, standard," recently analyzed by the writer, failed to show any phosphorus whatever, from which the conclusion seems obvious that the solution contains no nuclein. "Tablets of nuclein solution" made by the same manufacturer likewise failed to show any appreciable amount of phosphorus.

A sample of "protonuclein special"—a dry powder—recently analyzed, contained 1·25 per cent. of phosphorus, an amount of phosphorus which accords with the view that the preparation represents a mixture of cell nucleoproteids with other cell material. Nearly two thirds of this phosphorus belongs to matter soluble on addition of water—*i. e.*, to nucleoproteids which dissolve in the water or in the dilute saline solution which results on the addition of water. "Protonuclein powder," which is presumably a dilution of the preceding preparation with milk sugar, was found to contain 0·22 per cent. of phosphorus.

The "improved nuclein solution," manufactured by Parke, Davis, & Co., is stated to be a one-per-cent. solution of pure nucleic acid from yeast, containing six per cent. of phosphorus. A sample of this solution recently analyzed was found to contain 0·078 per cent. of phosphorus, which would imply the presence of even more than one per cent. of such a nucleic acid. From the solution the nucleic acid itself can be partially separated by precipitation with a little dilute hydrochloric acid and the addition of alcohol. A sample of the acid so precipitated and dried was found on analysis to contain 5·71 per cent. of phosphorus, so that it is evident that a very pure nucleic acid, and one with a high content of phosphorus, can be separated and made available in fluid form. In this "nuclein solution," therefore, we have pure nucleic acid isolated by chemical methods from its natural combination with the proteid matters of the yeast cell, and held in solution by the action of a weak alkali. In "protonuclein," on the other hand, we have the nucleoproteids and nucleins of various gland cells without chemical separation from the other cell constituents. It is therefore obviously not a pure nuclein, which, indeed, it does not purport to be, but rather a product containing all the cellular elements characteristic of the tissues from which it is derived.

As to the exact therapeutical action of nucleic acids, nucleins, and nucleoproteids, time and experience alone can determine.

Changes of Address.—Dr. Irvin A. Fries, to No. 1314 South Fifteenth Street, Philadelphia; Dr. Leopold Stieglitz, to No. 58 East Sixty-sixth Street, New York.

THREE WARNINGS OF INTEREST TO OBSTETRICIANS.*

By J. MILTON MABBOTT, M. D.,
ATTENDING OBSTETRICIAN, NEW YORK INFANT ASYLUM.

There are three warnings which obstetricians should have constantly in mind which are almost uniformly neglected. Although extremely simple in character, they are not less vital in importance, and as the writer believes their more general observance would result in the saving of many lives, he desires to make them the subject of serious consideration in this paper and unfailing application in practice.

First.—Warn a woman not to neglect any kind of hæmorrhage during pregnancy. The writer himself has witnessed the deaths of two mothers, one from accidental the other from unavoidable hæmorrhage, both of whom, in his opinion, might have been saved had they received treatment sufficiently early. As it was, each case came under treatment—one in the Nursery and Child's Hospital, the other in private practice—after two days' hæmorrhage had reduced the patient to a condition of hopeless exhaustion. The writer has sounded this note of warning elsewhere in a paper advocating the more general examination of pregnant women in private practice. Such an examination after the sixth month enables us to eliminate uncertainty as to placenta prævia, and either emphasize the warning or give our patients comparative assurance accordingly. Such assurance is alone worth what it costs in the way of embarrassment, trouble, or expense. But whether or not you examine your patient when you first see her, warn her to notify you immediately in the event of any flow of blood from the vagina. You need not frighten her. Tell her you warn all your patients, and not more than one in a hundred has occasion to act on the warning. If she happens to be the one, you will have done your duty and she will understand hers.

Second.—Warn a woman during labor that she must keep her hands away from her vulva and vagina so long as she is confined to bed. I am assuming that she has a nurse or some one to take care of her. A case of pyæmia came under the care of the writer two years ago in the New York Infant Asylum where the patient, a colored woman, admitted having examined herself with her finger within twenty-four hours after delivery to see how different she was from before. I have no doubt that it was this self-exploration which resulted in her death, as there was no other reasonable explanation and the same house staff and nurses were caring for other patients before and after the development of sepsis in this case without any other patient becoming septic. This ætiology of sepsis is probably rare; it may be less rare than we think. When we are preparing our own hands for an obstetrical examination let us warn every patient of the dangers of contact with a hand not so prepared. A man who has

---

* Read before the Section in Obstetrics and Gynæcology of the New York Academy of Medicine, March 26, 1896.

seen only one death attributed to this cause feels justified, nevertheless, in writing thus strongly.

Third.—Warn a nursing woman never to fall asleep with the infant at the breast. Cases of "overlying" are so common that they are almost criminal. And yet the writer confesses the loss of two infants—one in private practice, the other in an institution—where the mothers had no suspicion of danger, and where the faces of the babies simply slipped down beneath the mothers' breasts, and death followed from apnœa, while the mothers quietly slept. A mother's anguish under such circumstances needs no description. In the private case the nurse, a second-year pupil of a training-school, who had brought the child to the mother for nursing and returned in twenty minutes to find the mother asleep and the baby dead, felt as if she could never forgive herself; while I, the physician, although no one else breathed a word of blame, felt almost culpable for having failed to give special warning of such a deadly danger. And yet, upon inquiry among many of my colleagues, I found none who was in the habit of directing the attention of mothers and wet-nurses to this important matter.

A separate bed for the infant, generally recommended to prevent overlying, does not obviate this particular danger. In both my cases the infant was provided with a separate bed. In addition to this provision, with the object of regulating the duration of each nursing, the writer and others have urged the importance of the wet-nurse always sitting up out of bed while nursing, and possessing a suitable robe for this purpose at night. In view of the imminent danger of which we are speaking, insistence upon this rule is fully warrantable in the case of the paid wet-nurse, and when observed will afford the desired safety. The rule, however, is inapplicable until a woman is allowed to sit up after delivery, and, on account of the inconvenience involved, it can hardly be extended to the mother under ordinary circumstances. But let us make her realize the danger and warn her invariably to remain awake—wide awake—while the infant is at the breast. The only other adequate safeguard is to have the nursing baby constantly watched by some other responsible person.

I believe there is an old Irish proverb which says "The only way to prevent the past is to put a stop to it before it happens." Let us endeavor to put a stop to further mortality from the causes under consideration by keeping these simple warnings in unremitting remembrance.

19 Fifth Avenue.

The Long Island Association of the Alumni of Columbia University (Medical Department).—An organization with this title, consisting of alumni of the College of Physicians and Surgeons, has recently been formed, and officers for the first year have been chosen as follows: President, Dr. Charles Jewett; vice-president, Dr. H. Beekman Delatour; treasurer, Dr. E. S. Hodgkins; secretary, Dr. C. F. Barber; directors, Dr. George Wackerhagen, Dr. Ernest Palmer, and Dr. H. A. Fairbairn. The objects of the association are both scientific and social.

THE FINDING OF THE STAPHYLOCOCCUS EPIDERMIDIS ALBUS IN AN UNEXPECTED MANNER.*

By THOMAS C. CRAIG, M. D.,
Passed Assistant Surgeon, U. S. Navy, Navy Yard, New York.

I have the honor to present for your inspection a very curious but constant parasite of the skin—viz., the *Staphylococcus epidermidis albus.*

This bacterium was brought prominently before the public a few years ago by Professor Welch, of the Johns Hopkins University. It is thought by many observers that the *Staphylococcus epidermidis albus* is identical with the *Staphylococcus pyogenes albus* of Rosenbach.

"This latter coccus was isolated by Rosenbach in 1884 from the pus of acute abscesses, in which it is sometimes the only micro-organism present, and sometimes associated with other pus cocci. In thirty-three acute abscesses examined by Passet in 1885, it was associated with *Staphylococcus pyogenes aureus* in eleven, with *Staphylococcus citreus* in two, with *Streptococcus pyogenes* in one, with both *Staphylococcus citreus* and *Staphylococcus pyogenes* in one, and was obtained alone from four."

I have thus quoted to show you how commonly this organism is found. In its morphology this micrococcus is identical with the *Staphylococcus pyogenes aureus*, but it is distinguished from it by the absence of pigment and by being somewhat less pathogenic. Surface cultures upon nutrient agar or potato have a milk-white color.

It liquefies gelatin in the same way as the golden staphylococcus does, but the deposit at the bottom of the liquefied gelatin is without color. With these exceptions it is not to be distinguished from the *Staphylococcus pyogenes aureus.*

"It is feebly pathogenic; a purulent infiltration of the cornea and panophthalmitis resulted when *Staphylococcus aureus* was inoculated upon the surface of the cornea by scratching with an infected needle, but inoculations made in the same way with the *Staphylococcus albus* healed spontaneously or gave rise to a perforating ulcer."

The recently published researches of Welch show that a white staphylococcus, probably identical with the *Staphylococcus pyogenes albus* of Rosenbach, is the most common micro-organism upon the surface of the body, and that "it is very often present in parts of the epidermis deeper than can be reached by any known means of cutaneous disinfection, save the application of heat."

With reference to this coccus, Welch says: "So far as our observations extend, and already they amount to a large number, this coccus may be regarded as a nearly, if not quite, constant inhabitant of the epidermis."

"It is now clear," he says, "why I have proposed to call it the *Staphylococcus epidermidis albus.* It possesses such feeble pyogenic capacity, as is shown by its behavior in wounds, as well as by experiment on rabbits, that the designation *Staphylococcus pyogenes albus* does not seem appro-

* Read before the Brooklyn Pathological Society at its November meeting, 1895.

priate. Still, I am not inclined to insist too much upon this point, as very probably this coccus, which has hitherto been unquestionably identified by Bossowski and others with the ordinary *Staphylococcus pyogenes albus* of Rosenbach, is an attenuated or modified form of the latter organism, although, as already mentioned, it presents some points of difference from the classical description of the white pyogenic coccus."

According to Welch, this coccus differs from the *Staphylococcus pyogenes aureus* not only in color, but also in the fact that it liquefies gelatin more slowly, does not so quickly coagulate milk, and is far less virulent when injected into the circulation of rabbits. It has been shown by the researches of Bossowski and of Welch that this coccus is very frequently present in aseptic wounds, and that usually it does not materially interfere with the healing of wounds, although sometimes it appears to cause suppuration along the drainage-tube, and it is the usual cause of "stitch abscess." Bossowski, in fifty cases of wounds treated antiseptically, obtained bacteria from the discharges in forty, and in twenty-six of these cases he found the *Staphylococcus pyogenes albus*.

"In forty five laparotomy wounds examined by Ghrisky and Robb, in which strict antiseptic precautions had been observed, the *Staphylococcus pyogenes albus* was found in nineteen."

My object in presenting this specimen and quoting the description of its morphology and habitat is (1) to impress on your minds the difficulty of completely sterilizing the skin; (2) to indicate the errors some observers have fallen into in ascribing certain diseases to micrococci obtained from the blood; and (3) to relate to you how I unexpectedly ran across this organism.

In all our antiseptic surgery we try by certain fixed procedures to destroy all the bacteria on the skin. We scrub and scour and wash the skin with antiseptics, and do to a great extent remove or destroy most of the bacteria; but deep down in the true skin there is often found this bacterium shown you this evening. No ordinary disinfection will reach it.

Fortunately, it is comparatively harmless, producing very little suppuration, and is probably easily destroyed by the phagocytes. Not a few observers, in searching for the cause of disease by making cultures from the blood, have announced that they had found a micrococcus which they believed to be the cause of the disease in question; thus we find one observer professing to have found a micrococcus to be the cause of scarlet fever; another, a micrococcus to be the cause of measles; another, a micrococcus to be the cause of erythema; and perhaps the best known of these is Dr. Freire, of Rio de Janeiro, who says that his micrococcus is the cause of yellow fever.

Is it not possible that many of these observers may have fallen into the error of describing this *Staphylococcus epidermidis albus* as the cause of these diseases?

Surgeon-General Sternberg, in his work on *Immunity*, says, concerning this micrococcus of Freire, that it is not the cause of yellow fever, that it does not produce pigment, and that in its morphology and growth in culture media it corresponds with the well-known *Staphylococcus pyogenes albus*.

Dr. Freire obtained his micrococcus from the serum in the vesicles produced by means of some blistering preparation applied to the skin.

A short time ago, while engaged in examining the blood of malarial-fever patients, I thought that I would try some cultivation experiments. I carefully cleaned the patient's finger by scrubbing it with soap and water and then with alcohol, not touching the finger with my own hands. A needle was sterilized by the flame and allowed to cool. The finger was then pricked deeply and the first drop of blood that welled up was thrown away; the second and third drops were also thrown away; the top of the next drop was then touched with a sterilized platinum wire and a stab culture in agar made. Two stab cultures were thus made. A sterilized platinum wire loop was then touched to the droplet and slanting agar inoculated. The tubes were then placed in the incubator. At the end of four days there was a whitish growth in one of the stab-culture tubes; the three others did not show any growth. Microscopic examination showed this growth to be a micrococcus, not at all resembling any malarial organism.

Subsequent inoculation into gelatin proved it to be the organism described by Welch as the *Staphylococcus epidermidis albus*, which is probably identical with the white staphylococcus of Rosenbach.

What surprised me was that I should get this pyogenic bacterium after what I supposed was a fairly good sterilization of the skin. The puncture was made on the palmar surface where there are no hairs. Had I made the puncture in the region where the hairs are, I might have argued that the bacterium had come from the sebaceous area around the hair follicle.

This bacterium was probably washed from the deep layer of the skin by the flowing blood, and the occurrence may serve to explain how suppuration sometimes occurs in seemingly aseptic wounds.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the Fifteen Days ending March 31, 1896:*

Bailhache, P. H., Surgeon. Granted leave of absence for three days. March 30, 1896.

Banks, C. E., Passed Assistant Surgeon. To proceed to Baltimore, Md., to inspect unserviceable property; then to rejoin station at Washington, D. C. March 30, 1896.

Peckham, C. T., Passed Assistant Surgeon. Granted leave of absence for thirty days. March 26, 1896.

Williams, L. L., Passed Assistant Surgeon. Granted leave of absence for fifteen days. March 26, 1896.

Cobb, J. O., Passed Assistant Surgeon. Granted leave of absence for two days. March 25, 1896.

Stoner, J. B., Passed Assistant Surgeon. To proceed from Baltimore, Md., to Savannah, Ga., and assume command of service. March 16, 1896.

Prochazka, Emil, Assistant Surgeon. To proceed from Detroit, Mich., to Evansville, Ind., for temporary duty; then to rejoin station at Detroit. March 19, 1896.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, APRIL 11, 1896.

THE NON-MEDICINAL TREATMENT OF PNEUMONIA IN CHILDREN.

The April number of that excellent journal, the *Archives of Pædiatrics*, opens with a notable series of six articles on the treatment of pneumonia in children, all by hospital physicians. The disease is treated of in its various forms, and the entire treatment receives consideration, but, since we lack space in which to do justice to the articles from all points of view, we shall restrict ourselves in this summary to the accessory treatment, referring our readers to the *Archives* for what the authors have to say concerning the use of drugs.

The first article, entitled The Method of Treating Pneumonia at St. Mary's Free Hospital for Children, New York, by Dr. George Montague Swift, is a paper read at the March meeting of the New York Clinical Society. Dr. Swift says that cases in which the physical signs are those of bronchitis, but in which the children appear unusually sick and have a temperature ranging above 102·5° F. in the axilla or in the groin, are regarded as probably cases of broncho-pneumonia and are treated accordingly. The plan in the treatment of these cases is to put the children in a room warmed to 75° F. or above, to keep a kettle of water boiling in the room, and on the kettle to keep a vessel of beechwood creosote or pine-needle oil, care being taken that the creosote does not boil down and become too pungent. The combination of warmth, steam, and evaporating creosote makes a soft, agreeable atmosphere which is most soothing to the inflamed and irritated bronchial mucous membrane. A child which has been coughing violently and frequently, says Dr. Swift, when placed in such surroundings, quiets down and coughs but rarely. One seldom needs cough syrups or expectorants in such an environment, he adds. The children with lobar pneumonia are kept in the well-lighted, well-ventilated wards of the hospital; some do better if they are removed to such a warm, moist atmosphere as was mentioned in connection with broncho-pneumonia. The oil-silk jacket is no longer used, but flaxseed poultices are applied for relief of pain. The use of an ice-bag for the same purpose has not as yet become common; in the cases in which it has been employed the result has been satisfactory.

In the second article, on The Treatment of Pneumonia in the Babies' Hospital, New York, Dr. L. Emmett Holt says that the pneumonia patients are kept in a ward by themselves with never less than 1,000 and usually 1,200 cubic feet of air allowed to each bed. The temperature of the ward is kept as nearly as possible at 70° F., and, in addition to as good ventilation as possible, the children are removed from the ward at least once a day to allow a thorough airing. Great attention is given to the feeding of these infants, as experience has shown that the worst thing to be feared is the slow failure of nutrition from disturbances of digestion, with vomiting or diarrhœa, but sometimes occurring without either. The food is always considerably diluted, although the regular hours of feeding are maintained. Water is given freely between feedings, usually combined with stimulants. For the youngest infants partly peptonized milk is the chief reliance. It has been found much easier to prevent disturbances of digestion by careful feeding at the outset than to control them when they have occurred. In connection with feeding, close attention is given to the bowels, particularly to avoid distention of the colon with gas, which is often found to produce attacks of cyanosis and sometimes even convulsions from the pressure upon the lungs. Wherever there is a disposition to much fermentation in the colon, the bowel is emptied once a day by irrigation. The general plan of treatment is to use as few drugs as possible, reserving the stomach for food and stimulants and relying upon external measures or applications to control special symptoms. Much reliance is placed upon counter-irritation and inhalations. Counter-irritation is made with a paste of one part of mustard and six parts of flour, which is made to encircle the chest. It is left on only long enough to redden the skin—*i. e.*, five or six minutes—and the application is repeated from three to eight times a day, according to circumstances. It has been found particularly useful where the bronchitis is prominent. Poultices have been practically discarded. Inhalations are used systematically in all cases, usually every three or four hours. For this purpose the child is placed in a closed tent into which steam is introduced from a croup kettle. The cases of lobar pneumonia are managed on much the same general plan, but counter-irritation is not used unless there is much pleurisy.

The third article, on The Treatment of Pneumonia in the Children's Hospital, Philadelphia, is by Dr. J. P. Crozer Griffith. He tells us that every patient with pneumonia receives a warm tub bath at the outset, if the general condition permits of it. If not, he is sponged. He is then confined absolutely to bed. Circumstances do not allow the pneumonic children with meningitis symptoms to be isolated, as would be desirable for the sake of mental rest; consequently all the cases, with occasional exceptions, are treated in the general wards. On the theory that croupous pneumonia, and probably broncho-pneumonia as well, is an infectious disease, no abortive or specific plan of treatment is attempted. Fever of moderate degree is not looked upon as of special import in pneumonia. Should it reach 104° or over, sponging with water of 70° to 80° is often employed, or a warm tub bath is given. If the temperature of the child is still higher, or the means used do not prove effectual, the temperature of the water is reduced, or a cool tub bath is given, but this is seldom necessary. Dr. Griffith's own feeling is that the fever *per se* can generally be disregarded, and that it is rather the

nervous symptoms which may accompany it that require treatment. Should great restlessness, insomnia, delirium, or convulsive movements appear to depend on the existence of fever, he endeavors to reduce this, independently of its degree. He has found that when the respiration is becoming much embarrassed, the heart failing, and the general strength waning, as it is especially apt to do in broncho-pneumonia, a plunge for from one to three minutes into a bath of 103° to 105° will often rouse the failing powers in a remarkable manner. In the use of the cotton jacket the practice differs. His colleagues constantly employ it. He formerly did, but does so no longer. He has never been able to see that it did any good or rendered the child more comfortable, but appeared to make it less so. To employ it to prevent "taking cold" seems to him irrational. For the same reason, he says, we should swathe the entire body in cotton, for it is not the part exposed to chilling which suffers. Jacket poultices are only occasionally used by any of the staff, and by some not at all. When there is much dyspnœa or pain, a hot light poultice sometimes gives great relief, but Dr. Griffith thinks that the indication for it seldom arises. Counter-irritation is used occasionally, oftenest in the form of turpentine stupes to relieve pain. Dr. Griffith is in the habit of employing friction with turpentine also, or, preferably, with amber oil in some cases of broncho-pneumonia, to relieve the attendant bronchitis, provided the rubbing does not exhaust the child.

In the fourth article, entitled The Treatment of Pneumonia in the Children's Hospital, Boston, by Dr. E. M. Buckingham, we learn that pneumonia patients are placed in the open ward with other patients, unless there is some special reason to the contrary. They therefore have a freer air than can always be secured in small rooms. Great care is taken to keep the air fresh and comfortably warmed, and in winter there is generally an open fire burning in the ward. As a rule the medical wards, says the author, are somewhat quieter than the surgical wards, in which last there are less likely to be children who can be injured by noise. Patients are supplied with warm but light clothing. Dr. Buckingham does not know that he ever saw a poultice used in the hospital, and that of the cotton-wool jacket is not at all common. Perhaps of late years it has not been used at all. Care is habitually taken that the child shall have food suited to its age and condition. With a high temperature the food is probably always liquid, and is commonly milk, either clear or variously modified.

In the fifth article, on The Treatment of Pneumonia in the New York Foundling Hospital, Dr. W. P. Northrup, we learn that in broncho-pneumonia of moderate extent and not following measles, whooping-cough, diphtheria, or influenza, the treatment is mostly symptomatic. For pain, localized, intermittent poulticing is employed. The poultice is made of English mustard mixed with cold water, one part, stirred into boiled flaxseed, three or four parts. The poultice is made up thin and large enough to cover the whole back of the thorax or the whole front or the whole of either side, as may be desired. This is kept on till the skin is well reddened. The poultice is then slipped out and a hot dry flannel is slipped under the clothes (or padded vest) to replace it. High temperature which manifests itself in cerebral symptoms—such as stupor, delirium, or great restlessness—not so much reliance being placed upon the thermometer as upon the symptoms, is to be relieved by baths. Sponging with warm water and alcohol, followed by fanning, cools the skin well. Immersion in water at 90° for from seven to fifteen minutes, with constant rubbing, is also employed. In all cases attention is paid to keeping the feet warm. In pleuro-pneumonia, counter-irritation is employed to clear up pleural dullness, iodine being applied to a point just short of blistering.

The final article of the series, by Dr. Samuel S. Adams, is entitled The Treatment of Pneumonia in the Children's Hospital, Washington, D. C. In croupous pneumonia, he says, absolute rest in bed is enjoined and great discretion is exercised in disturbing the patient for physical examinations. Frequent examinations of the chest are avoided, thereby saving extra labor to the overworked heart. If the pneumonic area is mapped out at first, and there is no reason to believe the inflammation has extended, nothing is to be gained by overzealous investigations; on the contrary, change of posture for purposes of auscultation and percussion will frequently tax the patient's strength and may induce syncope. The diet is restricted to milk or animal broths in suitable quantities, and food is given every two hours during the day and every three hours at night. Cool water is also given at frequent intervals, but cracked ice is forbidden. The cotton jacket, with or without oiled silk, is worn throughout the attack. If there is acute pain with surface congestion, dry cups are applied over the inflamed area, followed by hot poultices and a jacket. The management of the fever depends very much upon its nervous manifestations. If the temperature does not exceed 104° F., with a daily range of one or two degrees, and there are no evidences of cerebral irritation, no measures are taken to reduce it; but if it remains continuously high and is attended with delirium or coma, Dr. Adams depends upon frequent sponging with alcohol and tepid water, or the graduated cold bath. Neither he nor his colleague has used the cold pack or the ice poultice. In some cases, he says, the graduated bath alone keeps the temperature within safe limits, controls the delirium, and stimulates the heart. In broncho-pneumonia, the general plan of treatment is much the same; most cases are so slight as to call for little more than rest in bed, a liquid diet, and the cotton jacket. If the inflammation extends to considerable areas, more active measures are pursued. Counter-irritation is produced by mustard pastes, turpentine stupes, or camphorated oil applied to the chest, but never to the extent of blistering. Hot flaxseed-meal poultices are indicated when the pulmonary congestion is intense or general. In hypostatic pneumonia, frequent changes of posture enter into the treatment.

MINOR PARAGRAPHS

M. MARIANI AND HIS PICCIOLA.

A cursory perusal of the third edition of M. Angelo Mariani's dainty little book entitled *Coca and its Therapeutic Application*, recently issued, suggests the thought that he has made the coca plant his veritable *Picciola*, with such enthusiasm does he announce his success in rearing a great number of the plants "in all stages of growth and of various species, under all conditions of planting, by seeds, transplantation, and grafting." He cordially invites physicians who may be interested in the subject to visit him at his laboratory, in Neuilly-sur-Seine. We regret that the place is so far away from New York.

THE NATIONAL CONFEDERATION OF STATE MEDICAL EXAMINERS.

In another column we publish the announcement of the meeting of this body. We call attention to it here on account of its peculiar importance in the present status of medical legislation in the various States.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending April 7, 1896:

DISEASES.	Week ending Mar. 31.		Week ending Apr. 4.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	13	3	9	2
Scarlet fever	114	5	113	12
Cerebro-spinal meningitis	6	5	3	3
Measles	496	26	450	26
Diphtheria	211	24	225	24
Tuberculosis	304	119	223	124

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from March 29 to April 4, 1896:*

Ives, Francis J., Captain and Assistant Surgeon, is relieved from duty at Plattsburgh Barracks, New York, and ordered to St. Francis Barracks, Florida, for duty at that station, relieving Caldwell, Daniel G., Major and Surgeon. Major Caldwell, on being relieved from duty at St. Francis Barracks, will, by direction of the President, report in person to the president of the Army Retiring Board at Washington Barracks, District of Columbia, for examination by the board.

Polhemus, Adrian S., Captain and Assistant Surgeon, will be relieved from duty at Fort Douglas, Utah, upon the expiration of his present sick leave of absence, and ordered to Fort Wingate, New Mexico, for duty.

Wales, Philip G., Captain and Assistant Surgeon, now on duty at Fort McPherson, Georgia, will report in person to the commanding officer at Fort Monroe, Virginia, for temporary duty at that post.

Society Meetings for the Coming Week:

Monday, *April 13th:* New York Academy of Medicine (Section in General Surgery); New York Academy of Sciences (Section in Chemistry and Technology); New York Medico-historical Society (private); New York Ophthalmological Society (private); Lenox Medical and Surgical Society, New York (private); Boston Society for Medical Improvement; Gynæcological Society of Boston; Microscopical Club of the Buffalo Society of Natural Sciences; Maine Academy of Medicine (Portland); Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private).

Tuesday, *April 14th:* Medical Society of the State of Tennessee (first day—Chattanooga); New York Academy of Medicine (Section in Genito-urinary Surgery); New York Medical Union (private); Buffalo Academy of Medicine (Section in Medicine); Kings County, N. Y., Medical Association; Medical Societies of the Counties of Jefferson (quarterly—Watertown), Oneida (annual—Utica), Ontario (quarterly), Rensselaer, and Tioga (Owego), N. Y.; Clinical Society of the Elizabeth, N. J., General Hospital and Dispensary; Newark (private) and Trenton, N. J., Medical Associations; Bergen (annual—Hackensack) and Cumberland (annual), N. J., County Medical Societies; Fairfield, Conn., County Medical Association (annual); Northwestern Medical Society of Philadelphia; Richmond, Va., Academy of Medicine and Surgery; Practitioners' Club, Richmond, Ky.

Wednesday, *April 15th:* Medical Association of Georgia (first day—Augusta); Iowa State Medical Society (first day—Des Moines); Mississippi State Medical Association (first day—Vicksburg); Medical Society of the State of Tennessee (second day); Medico-legal Society, New York; Northwestern Medical and Surgical Society of New York (private); Philadelphia County Medical Society; New Jersey Academy of Medicine (Newark); Windham, Conn., County Medical Society (annual—Plainfield); Middlesex, Mass., South District Medical Society (annual—Waltham).

Thursday, *April 16th:* Medical Association of Georgia (second day); Iowa State Medical Society (second day); Mississippi State Medical Association (second day); Medical Society of the State of Tennessee (third day); New York Academy of Medicine; Brooklyn Surgical Society; Tolland County, Conn., Medical Society (annual); New Bedford, Mass, Society for Medical Improvement (private).

Friday, *April 17th:* American Laryngological, Rhinological, and Otological Society; Medical Association of Georgia (third day); Iowa State Medical Society (third day); Mississippi State Medical Association (third day); New York Academy of Medicine (Section in Orthopædic Surgery); Brooklyn Medical Society; Baltimore Clinical Society; Chicago Gynæcological Society.

Saturday, *April 18th:* New York Medical and Surgical Society (private).

Answers to Correspondents:

No. 445.—We think the book has not yet been translated into English.

No. 446.—We do not know of any such vacancies. There are no salaries paid to such officers as you mention. We think the civil-service examination that you have in mind related to some subordinate office.

No. 447.—At present the colony admits only indigent epileptics who are legal residents of the State of New York. There are 1,021 such cases, and only 300 beds available this year in the colony. It will be several years before private patients from other States can be admitted. When the colony is ready to receive private patients, the rate will vary, we learn, from $5 to $25 a week, according to the accommodations required.

Births, Marriages, and Deaths.

Born.

MOLL.—In Cambridge, Mass., on Friday, April 3d, to Dr. and Mrs. L. Arthur Moll, a son.

Married.

BLACK—COLE.—In Denver, on Thursday, April 2d, Dr. George Melville Black and Miss Ada Eleanor Cole.

DIXON—PETTINGILL.—In New York, on Wednesday, April 1st, Dr. Edwin Hartley Dixon and Miss Ella B. Pettingill.

FRANCIS—WESSON.—In Orange, N. J., on Tuesday, April 7th, Dr. Carleton S. Francis, of Brookline, Mass., and Miss Elsie Wesson.

JACKSON—CLARK.—In New York, on Tuesday, April 7th, Mr. William H. Jackson and Miss Jennie T. Clark, daughter of Dr. Stephen J. Clark.

MCGEE—FULKERSON.—In Pittsburgh, on Tuesday, March 31st, Dr. W. Clay McGee, of Houcktown, Ohio, and Miss Kate Fulkerson.

MERMILLIOD—LAMBERT.—In New Orleans, on Tuesday, April 7th, Dr. Mermilliod and Miss Marie Lambert.

Died.

BOOTH.—In New York, on Wednesday, April 1st, Eric, son of Dr. J. Arthur Booth, in the fifth year of his age.

DE FOREST.—In Lakewood, N. J., on Thursday, April 2d, Mrs. Catherine Sedgwick De Forest, widow of Dr. Henry A. De Forest, aged seventy-nine years.

FLUD.—In Summerville, S. C., on Tuesday, March 24th, Dr. Daniel Flud, in the seventy-eighth year of his age.

HARRIS.—In St. Francisville, La., on Monday, March 30th, Dr. B. B. Harris, aged thirty-four years.

TERRY.—In Ridgebury, N. Y., on Monday, April 6th, Dr. Wilmont C. Terry.

Letters to the Editor.

A MATTER OF TERMS.

ITHACA, N. Y., *April 1, 1896.*

To the Editor of the New York Medical Journal:

SIR: In your editorial, The Cause of the Preponderance of Dorso-anterior Positions of the Fœtus, March 21, 1896, the terms "dorso-posterior" and "dorso-anterior" indicate, as usual, positions in which the back of the fœtus looks toward the back of the mother or in the opposite direction, respectively. In these combinations the regions of the mother are thus designated by ambiguous anthropotomic words, while the fœtus is treated practically as a quadruped and its back and belly referred to as in comparative anatomy. Would any student or practitioner be misled by the consistent terms of the intrinsic toponymy, *dorso-dorsal* and *dorso-ventral?*

BURT G. WILDER, M. D.

A GLASS DOUBLE-CURRENT VAGINAL IRRIGATOR.

449 PARK AVENUE, NEW YORK, *April 7, 1896.*

To the Editor of the New York Medical Journal:

SIR: In the *Journal* of March 28th I described a hard-rubber double-current vaginal irrigator. Since then I have devised an irrigator of glass, somewhat after this model. It has the advantage of being clean and very cheap. The glass irrigator is made by Reynders & Co. The same firm have also modified my rubber irrigator, making it with a soft-rubber perineal pad, or with a pneumatic rim, if so desired.

R. C. KEMP, M.D.

Book Notices.

Mentally Deficient Children: Their Treatment and Training. By G. E. SHUTTLEWORTH, B. A., M. D., etc., Late Medical Superintendent, Royal Albert Asylum for Idiots and Imbeciles of the Northern Counties, Lancaster; etc. London: H. K. Lewis, 1895. Pp. xiv–140.

THIS is a short manual on the subject of the special education of mentally deficient children. It has a chapter of historical retrospect, and chapters on the pathological classification of mental deficiency, on the ætiology, diagnosis, and prognosis, and on the pedagogic treatment. The author discusses, in the second chapter, the American use of the term "feeble-minded" as including idiocy and imbecility, and states that in England the term is especially applied to the slighter grades of mental defect. It is, however, not true that the term "feeble-minded" is used in this country to include idiocy and imbecility; we have here the same application of the term as they have in England, dividing idiocy—which is really the inclusive term—into three grades: idiocy, imbecility, and feeble-mindedness. It is true that some of our institutions are called hospitals or institutions for the feeble-minded, but that is merely a euphemism made use of to avoid the unpleasant effect upon the public mind of such a term as "asylum for idiots." The book is very well written and illustrated. It will certainly prove useful to every one who is at all interested in the subject of the mental and moral training of the defective classes.

Deaf-mutism. A Clinical and Pathological Study. By JAMES KERR LOVE, M. D., Aural Surgeon to the Glasgow Royal Infirmary, etc. With Chapters on the Education and Training of Deaf-mutes. By W. H. ADDISON, A. C. P., Principal of the Glasgow Deaf and Dumb Institution. Glasgow: James MacLehose & Sons. London and New York: Macmillan & Co., 1896. Pp. xii–369. [Price, $2.75.]

THIS work is a valuable addition to the literature of this important subject. The clinical and pathological portion of the book is by Dr. Love; the educational section, by Mr. Addison. English medical literature concerning deaf-mutism is not abundant, and the authors have aimed at assisting the English-speaking physician in his rather limited knowledge of this special field of medical science. Their painstaking labors will certainly be of great benefit, and especially as a book of reference this volume should possess much value. It is only in the more recent medical works on the ear that deaf-mutism is treated of at all, and then usually in a more or less superficial manner, the subject being almost always relegated to the end of the book. The works of Hartmann and Mygind, however, are notable exceptions in this respect.

An interesting chapter of the book is devoted to the general character of deaf-mutes. The tables comparing the physical characteristics (height, weight, head, and chest

measurement) of boys of some of the public schools and those of institutions for the deaf and dumb are very instructive in view of the assertions so frequently made, that these unfortunates have faces unlike their healthy neighbors, have weak lungs, and are scrofulous, left-handed, less sensitive to pain, etc. The figures certainly prove that no such physical inferiorities exist as a consequence of deaf-mutism, the deaf-mute boys of the Glasgow Institution being physically equal to the average of hearing children, if not superior to them. Interesting observations are given concerning the breathing of deaf-mutes, their liability to certain diseases, their teeth, their sensitiveness to touch, their mental qualities, etc. In a limited space it is quite impossible to go into all the details, as we should desire, in reviewing this work. As such facts are founded largely on statistical reports of examinations, a too exhaustive criticism is out of the question.

The hearing power of deaf-mutes receives careful consideration. We find that total deafness is not common among deaf-mutes; that hearing for speech is rather common, existing to a useful degree in from twenty-five to twenty-seven per cent., and that from ten to fifteen per cent. are only partially deaf; furthermore, that hearing by cranial conduction exists in almost all cases. The important question concerning the relative extent of congenital and acquired deafness is ably handled, as are also the subjects of the transmission of congenital deafness, the heredity of malformations, and consanguineous marriage and deaf-mutism, the last-named being also considered with regard to legislation by the State. The conclusions reached are that congenital deafness is responsible for a large number of cases of deaf-mutism; that congenital deafness is hereditary; that the facts about the transmission of congenital deafness are not special to this defect; that the external ear is, like other organs, subject to malformation, and this is sometimes transmitted; that consanguinity in parents emphasizes features in offspring; that marriage of the congenitally deaf and of persons able to hear in fraternities severely tainted with congenital deafness should be discouraged. Acquired deafness, the morbid anatomy of deaf-mutism, and its diagnosis, prognosis, and treatment are well presented. The chapter on census returns is also replete with important and interesting information.

Mr. Addison's portion of the book, devoted to the deaf-mute from an educational standpoint and to the systems and results of education, will carry great weight and prove itself well worth careful study. A brief summary of the legal status of the deaf and dumb is appended, and forms the conclusion of the work.

The Toxic Amblyopias. Their Classification, History, Symptoms, Pathology, and Treatment. Being an Essay to which was awarded the Alvarenga Prize of the College of Physicians of Philadelphia, October, 1894. By G. E. de Schweinitz, A.M., M.D., Professor of Ophthalmology in the Philadelphia Polyclinic, etc. With Forty-six Illustrations and Nine Plates. Philadelphia: Lea Brothers & Co., 1896. Pp. viii–17 to 238. [Price, $4.]

This is a very satisfactory work on a subject which has often been treated before. The book is carefully compiled, the references have been, so far as possible, verified, and original sources have been consulted. Some original work has been introduced with reference to alcohol amblyopia, quinine, cinchonine, and salicylic-acid amaurosis, and the so-called filix-mas amblyopia. The chapter on quinine amaurosis has been published in another place, but, as it is the most interesting and the only one of the series giving positive results, it is well that it should be made accessible to the general reader. The difficulty in such works as this is to review the literature in a fair spirit of criticism. There is a tendency to accept all plausible assertions without sufficient verification. The statements of some inexact or over-enthusiastic observers we have learned to accept with reserve; yet, with the endless capacity for morbid change and the protean susceptibilities of the human organism, what critic would venture to be dogmatic? Dr. de Schweinitz has for the most part acquitted himself well of this difficult task; the statements are guardedly received and justly weighed where it is possible.

Nearly half the book is devoted to amblyopia from the abuse of alcohol and tobacco, an amount of space justified by the practical importance of these forms. The distinction between the two is not yet clearly defined. The well-known investigations of Samelsohn, Uhthoff, Nettleship, and others, which are largely quoted, prove that there may be an interstitial inflammation of the optic nerve, limited to a small area which contains the fibres from the central portion of the retina; this neuritis may be followed by atrophy of the nerve fibres, causing the characteristic symptoms and appearances. A number of toxic influences seem to produce the same symptoms, varying, so far as is known, only in the tendency to progression or recovery. It is curious to note the opposing views held by different schools. The English, followers of Jonathan Hutchinson recognize the tobacco amblyopia as the commoner form, some going so far as to deny the independent toxic action of alcohol. The French, on the other hand, belittle the influence of tobacco. The prognosis of the alcoholic amblyopia is graver, suggesting cirrhosis of the liver in its pathology and course. Tobacco, if it leads to a true retrobulbar neuritis, affects the tissues less gravely, and the prognosis is almost uniformly good on cessation of the habit. According to Berry, "there is no proof that cases of toxic amblyopia are really cases of retrobulbar neuritis." The cases examined have exhibited other evidences of disease—*e. g.*, diabetes—hence it does not follow that the typical central scotoma found in the centre of each visual field, which is met with in toxic amblyopia, has the same origin as that which occurs in retroocular neuritis. It is generally admitted, however, that the combined use of alcohol and tobacco produces a lesion of the optic nerve of which the cases reported by Uhthoff and others may be taken as types. Efforts made by the author to produce alcoholic amblyopia in a monkey failed. It is not stated whether fusel oil or other impure forms of alcohol were used; these are regarded by Fuchs as important toxic agents. Interesting observations on different forms of tobacco and its active principles are quoted, showing that nicotine, on account of its volatility, has a less poisonous action than pyridine. The strange exemption of the Turks and Cubans, who consume enormous quantities of tobacco, is inexplicable, except by the assumption of racial immunity.

Bisulphide of carbon, iodoform, nitrobenzol, the coal-tar products, arsenic, and lead are considered in the same thorough manner, with an exhaustive review of the literature. Summaries of the four cases of iodoform amblyopia thus far reported are given. With the exception of Valude's case, which was complicated and went on to atrophy, normal vision was restored in all of them. The symptoms are those of a toxic amblyopia similar to that of tobacco. Nitrobenzol and dinitrobenzol give somewhat different symptoms, occasionally a central scotoma for colors, but with the field also concentrically contracted. The most marked features are shown in the ophthalmoscopic appearance—the dark tint of the fundus, "as if stained with ink," and the unusually swollen, tortuous, and dark veins—symptoms not present in other toxic amblyopias. The pathology is not definitely known. Snell

has made the most important contribution to our knowledge of this subject, and his work is extensively quoted by the author.

The amblyopia in lead poisoning may be due to a variety of lesions of the retina and optic nerve, similar in appearance to those of nephritis, or of a true toxic neuritis which may occur from a direct action of lead on the tissues without the presence of nephritis.

The chapter on quinine amaurosis is interesting, as it contains a complete review of what is known of the subject, and five excellent photographs of the optic nerves of dogs showing the characteristic lesions. These specimens, which illustrate the author's original work, show an advanced stage of atrophy with endovasculitis, thrombosis, and organization of the clot, and, finally, practically complete atrophy of the visual path. "It seems, then, very likely that the original effect of quinine is on the vaso-motor centres, producing constriction of the vessels; that finally changes in the vessels themselves are set up, owing to an endovasculitis; that thrombosis may occur; and that the result of all these is an extensive atrophy of the visual tract." Schilling's observation that ergot, given with quinine, prevented the toxic symptoms in both eye and ear, as well as the results of investigations of deafness caused by quinine, may throw some doubt on this order of events.

The use of bromides in quinine amaurosis, as well as in the amblyopia of tobacco and alcohol, is, theoretically at least, of doubtful value, in spite of the relief from the symptoms which it may give. A trifling omission in the paragraph devoted to digitalis must be noted. Cases of amblyopia are mentioned by Lewin (*Die Nebenwirkungen der Arzneimittel*, p. 630), and are attributed to the action of digitoxin.

In conclusion, the book is interesting and valuable; it might have been more individual, but the industry and judgment of the author merit the highest praise. Its appearance is very attractive, and the publishers have spared no pains, in spite of the fact that it will appeal only to a comparatively narrow circle of readers.

An Atlas of the Normal and Pathological Nervous Systems. Together with a Sketch of the Anatomy, Pathology, and Therapy of the Same. By Dr. Christfried Jakob, Practising Physician in Bamberg, etc. With an Introduction by Professor Dr. Ad. v. Strümpell. Translated and Edited (authorized) by Joseph Collins, M. D., Instructor of Nervous and Mental Diseases, New York Post-graduate Medical School, etc. New York: William Wood & Co., 1896. Pp. xxvii–3 to 232. [Price, $3.50.]

This is one of a series of five *Hand Atlases* on various medical subjects now offered to the profession by the same publishing house.

The most casual inspection can not fail to reveal that this atlas affords very valuable assistance in the difficult study of the histology of the nervous system. Ten plates, three of which are colored folding charts, are devoted to the gross anatomy of the brain and spinal cord as they appear externally and on section. Of these, the plates representing sections will be found of assistance in recognizing the situation of the various internal landmarks. The development and general histological structure of the nervous system are presented in twelve plates, most of which are from original drawings. The topographical anatomy of the nervous system, as seen in serial sections, is represented in thirty plates of schematic drawings, made from sections stained by various methods, and in these plates the student will find material assistance in the study of the normal histology of the nervous system. Then follows an extensive illustration of the pathological anatomy of diseases of the nervous system, in a series of twenty-six plates which complete the portion of the work devoted to the atlas proper.

Of the plates relating to pathology, many will greatly assist the average reader in the comprehension of the various lesions; others, however, can hardly be considered much of an improvement over verbal descriptions. For example, on the question of degenerative changes in ganglion cells, the author is, so far as the plates show, nearly non-committal. The comparatively low cost of the work may, however, excuse many of these minor deficiencies.

One half the volume is occupied by a brief discussion of the subjects represented in the plates. Much of this text is necessary for the further elucidation of the plates, which are only partially annotated in the single page of description accompanying each one. To attempt to treat of clinical diagnosis and therapeutics in a histological atlas appears to us, however, to be a mistake in judgment, and the space devoted to these subjects adds nothing to the value of the work. Section VI, on the technics of nervous pathology, is not sufficiently extended to be of any value.

In so far, then, as it adheres to the original purpose, the work meets an urgent need, and will doubtless receive considerable attention on account of its many excellencies. The three prefatory notes are each distinctly open to protest. Professor Strümpell does not mean to allege perfection for the drawings, although he states that "every unprejudiced observer will be convinced that the illustrations convey everything that can be thus given." The author probably did not express himself exactly in the following somewhat fanciful statements: "I consider this [the fact that the drawings contain much more material than is explained] to be rather an advantage for the book. I hope that by this means actual close study will be directed toward the illustrations. And thus the formation of an independently reached decision, of the greatest importance for our science, will be made possible."

The editor's translation of *Gehirnstamm* all neurologists may not consider quite accurate, and his preference for "poronymization protal" as euphonious words, will meet with the approval of very technical readers only. In endeavoring to make the translation a literal one, so far as was consistent with lucidity, it would seem that the editor has at times overdone his unconditional duty to the author at the expense of the reader's ease. We confess our belief, however, that the original text presented some unusual difficulties.

An Atlas of Ophthalmoscopy. With an Introduction to the Use of the Ophthalmoscope. By Dr. O. Haab, Professor of Ophthalmology, University of Zurich. Translated and edited by Ernest Clarke, M. D., B. S. Lond., Fellow of the Royal College of Surgeons, etc. New York: William Wood & Company, 1895. Pp. 55.

As the title would lead us to suppose, the value of this work lies in presenting to the eye colored pictures of the fundus oculi in conditions of health and disease, and a criticism, to be of value, must be directed to their drawing and coloring, for, to quote the words of the author (translation, page 10), "a little more white, or red, or gray may change the picture in so important a manner that the experienced oculist will recognize serious changes which the beginner may think are normal or of no consequence, and *vice versa*." In a case like the present one, where existing plates have been repro-

duced, the task of the critic is much simplified, for he has only to determine how accurately the original has been followed.

The German edition of this atlas is unusually fortunate in the lifelike appearance of the pictures, but it is amenable perhaps to one criticism, although this is forestalled by the author. All the drawings were made by the indirect method, and the important details were supplied by the direct method, and consequently certain details are not represented. We agree at once with the author that such details are "most difficult to reproduce faithfully in a picture"; it can be done only by the most painstaking care. In regard to the statement that "they are most bewildering to the beginner," we think that the beginner must become accustomed to the appearances actually present in the fundus, and their correct production in the plate would certainly be no greater cause for bewilderment than their unexpected presence in the eye itself. Again, the accuracy of the proportions of a picture may be questioned when it is painted from observations made partly by the indirect and partly by the direct method.

A comparison of the illustrations in the German and American editions shows so very close a resemblance in drawing that it could hardly have been closer had they been printed from the same plates, but often a greater delicacy is apparent in the German plates. An amusing fault in drawing is presented in Figure 9 in both editions, where the disc is duplicated by a dislocated lens and the arrangement of vessels about the disc is nearly but not exactly the same in both places.

The colors are not usually so good in the American as in the German edition. Thus, in Figures 12, 13, 14, 15, 16, and others, the red is too brown, the yellow is too pronounced, and delicate colorings are confounded. In some places, as in the centre of Figure 12 and in the macular region of Figure 13, there is a distinct greenish tone which is not present in the original. But the main fault in most of the pictures of the American edition is the want of brilliancy of the red, which contributes so materially to the lifelike appearance of the pictures in the German edition. This can be clearly shown by comparing Figure 19 in the two editions. Although the drawing is the same in both, the stellate degenerative changes about the macula have a brilliant appearance in the German edition, but not in the American. Figures 23, 27, 29, and 30 are excellent copies in every respect. In Figure 25 the gray tone of the nerve is more delicate in the German edition. In Figure 31 the blue-gray tone about the periphery and the snufflike appearance of the fundus are much more pronounced in the American edition, and the variation between the two editions is perhaps most marked in this plate.

It is as difficult to obtain a plate which will present accurately the picture of the fundus oculi as to obtain a chromolithograph which will accurately portray Meissonier's Friedland; minute characteristic details, often difficult to describe, are omitted and the lifelike character is lost, and still more difficulty must be experienced in an endeavor to reproduce such a plate and retain such semblance of life as was obtained in the first. So the American reproduction of these plates presents us triumphs of mechanical skill which are thoroughly worthy of study, although as a rule they lack brightness and fire.

Each picture is accompanied by a description of sufficient length, clearness, and conciseness. Very few better descriptions can be found.

With regard to the remarks on the use of the ophthalmoscope, they are acceptable and creditably translated, but they do not contain anything new or of sufficient importance to deserve an extended review. The reader has the feeling that it was written rather to introduce the book to him than because the author had anything in particular to say in regard to this subject.

A Pictorial Atlas of Skin Diseases and Syphilitic Affections in Photo-lithochromes from Models in the Museum of the Saint-Louis Hospital, Paris. With Explanatory Woodcuts and Text by Ernest Besnier, Physician to the Saint-Louis Hospital, etc.; Tenneson, Physician to the Saint-Louis Hospital; Hallopeau, Member of the Academy of Medicine, etc.; and Du Castel, Physician to the Saint-Louis Hospital. With the Co-operation of Henri Feulard, Curator of the Museum, and Léon Jacquet, Secretary of the Dermatological Society of France. Edited and annotated by J. J. Pringle, M. B., F. R. C. P., Assistant Physician to and Physician to the Department for Diseases of the Skin at the Middlesex Hospital, London. London: F. J. Rebman. Philadelphia: W. B. Saunders, 1895. Part II. Pp. 29 to 53. [Price, $3 each part.]

Part II of this atlas maintains in all respects the high standard of excellence shown in Part I, which appeared a month or so ago and was noted with some enthusiasm at the time. The first fasciculus of the part we have before us deals with the subject of erythematous lupus of the face, with a most excellent accompanying colored plate. The representation, though somewhat at variance with the descriptive text, is too typical of this variety of lupus to make the lack of the described "classical resemblance to a butterfly" count for much. Hallopeau gives the descriptive text, and is strong in the belief of the tuberculous nature of this disease, in agreement with Hutchinson and Besnier, who have long striven to establish the ætiological unity of lupus erythematosus and lupus vulgaris. Besnier gives an interesting *exposé* of his views in his valuable annotations on the article Lupus Érythémateux in the second French edition of Kaposi's *Text-book* (Paris, 1891, pp. 250 *et seq.*). In the case under consideration the instance of the patient showing a scar from suppuration of a cervical gland in childhood, with additional evidences "which permitted of no doubt as to the existence of tuberculosis" (no mention is made of the sputum's having been examined, though the patient had a severe cough), and an ensuing violent local and general reaction after the injection of tuberculin are the facts given (a coincidence, on the one hand, and a fallacy on the other) as an argument of the highest importance in favor of the theory maintained. The coexistence of tuberculous disease in the other organs in a certain small proportion of cases is the one positive fact adduced in its favor. This, as well as the alleged frequency of a tuberculous family history, is capable of fuller explanation on other grounds. Senn, after quoting largely on the subject, in summing up on the diagnostic value of tuberculin, says: "A careful study of the voluminous literature on the use of Koch's lymph and my own experience with it have induced me to abandon the use of Koch's lymph as a diagnostic agent." The theory of the tuberculous origin of lupus erythematosus, which appears based too purely upon hypothetical arguments, would seem to bend to the fact that no bacilli have ever been demonstrated in this disease, and inoculation experiments have invariably given negative results.

Plate II is a representation of an uncommon phase of rosacea, resembling so strongly in its unusual features, particularly in its localization—the forehead—the frontal leontiasis of lepers, that this is the reason given for including it in this atlas. Several comparative plates are given, and these, together with the differential points brought out by

the writer of the article, Besnier, make this an interesting and instructive fasciculus.

The next fasciculus is upon circinate syphilitic lesions of the skin, confluent and cockade-shaped, by Thibierge. The plate that goes with this is a fine one, and illustrates most beautifully one of those extraordinary appearances that syphilitic lesions at times assume. The text is somewhat lengthy and, not to put too fine a point upon it, is a little drawn out upon the question of nosology.

The fourth and last article of this part is a report of a case of xanthoma planum et tuberosum in a glycosuric, icteric, and obese subject, by Darier, with an accompanying plate illustrating the peculiar features of this mysterious disease. The plate is, like the others, excellent, and the case is fully reported.

Assistance, traitement et éducation des enfants idiots et dégénérés. Rapport fait au Congrès nationale d'assistance publique (session de Lyon, juin 1894). Par Bourneville, médecin de Bicêtre (section des enfants nerveux et arriérés), membre du Conseil supérieur de l'assistance publique, etc. Paris: Aux bureaux du *Progrès médical*, Félix Alcan, éditeur, 1895, pp. 246.

This is one of the numerous publications by M. Bourneville on the subject of idiocy and feeble-mindedness. It is especially devoted to the question of public assistance of persons so affected, and their educational treatment. The first chapter concerns the establishments for these degenerates in France. Then follow chapters on similar institutions in Germany, Austria, Belgium, Great Britain, Spain, Finland, Russia, Greece, Holland, Denmark, Norway, Sweden, and other European countries, as well as those of the United States and South America. The second part of the book contains a discussion which took place upon Bourneville's brochure before one of the French societies; and the third part is devoted entirely to the subject of the medico-pedagogic treatment of the feeble-minded, with illustrations of the apparatus necessary for the purpose. It is needless to say that the work is well done, and that it is an important contribution to this department of medicine.

BOOKS, ETC., RECEIVED.

The Histopathology of the Diseases of the Skin. By Dr. P. G. Unna. Translated from the German, with the assistance of the Author, by Norman Walker, M. D., F. R. C. P. Ed., Assistant Physician in Dermatology to the Royal Infirmary, Edinburgh. With Double Colored Plate containing Nineteen Illustrations, and Forty-two Additional Illustrations in the Text. Edinburgh: William F. Clay. New York: Macmillan & Co., 1896. Pp. xxviii–1205. [Price, $10.50.]

Diagnosis and Treatment of Diseases of the Rectum, Anus, and Contiguous Textures. Designed for Practitioners and Students. By S. G. Gant, M. D., Professor of Diseases of the Rectum and Anus, University and Woman's Medical Colleges, etc. With Two Chapters on Cancer and Colotomy by Herbert William Allingham, F. R. C. S. Eng., Surgeon to the Great Northern Hospital, etc. Illustrated with Sixteen Full-page Chromo-lithographic Plates and a Hundred and Fifteen Wood Engravings in the Text. Philadelphia: The F. A. Davis Company, 1896. Pp. xiii–399. [Price, $3.50.]

An Inquiry into the Difficulties encountered in the Reduction of Dislocations of the Hip. By Oscar H. Allis, M. D., Fellow of the Royal College of Physicians, and of the Academy of Surgery, Philadelphia, etc. The Samuel D. Gross Prize Essay. Philadelphia, 1896. Pp. xv–3 to 171. Diets for Infants and Children in Health and in Disease. By Louis Starr, M. D. Philadelphia: W. B. Saunders, 1896. [Price, $1.25.]

Les Artérites. Leur rôle en pathologie. Par A. Brault, médecin de l'Hôpital Tenon, etc. Paris: G. Masson, 1896. [*Encyclopédie scientifique des aide-mémoire.*]

The National Formulary. A New and Revised Edition. Supplement to the National Dispensatory. Philadelphia and New York: Lea Brothers & Co., 1896. Pp. vi–115.

Transactions of the American Pædiatric Society. Seventh Session. Volume VII.

Twenty-ninth Annual Report of the Managers of the Hudson River State Hospital at Poughkeepsie, N. Y., for the Year ending September 30, 1895.

Plans for Delivery of Occipito-posterior Positions. By Stanley P. Warren, Portland, Me. [Reprinted from the *American Journal of Obstetrics.*]

Subphrenic Abscess. By Carl Beck, M. D. [Reprinted from the *Medical Record.*]

A Clinical Study of Three Hundred and Fifty-four Cases of Foreign Bodies situated on and in the Cornea. By Charles A. Oliver, M. D. [Reprinted from the *Codex Medicus.*]

A New Method and Substance for Demonstrating Minor Gynæcological Operations. By Carey K. Fleming, M. D., Denver, Col. [Reprinted from the *Denver Medical Times.*]

Reports on the Progress of Medicine.

OPHTHALMOLOGY.

By CHARLES STEDMAN BULL, M. D.

The Influence of the Cerebrum and Cerebellum on Eye Movements.—Russell (*Ophth. Rev.*, August, 1895) thinks that inasmuch as similar lateral displacement of the eyes may result from a cerebral and a cerebellar lesion, it is most important that we should clearly recognize their exact association with other phenomena which result from lesions of these respective parts of the central nervous system. In a destructive lesion of one cerebral hemisphere with hemiplegia and ocular displacement the paresis of the limbs is on the opposite side, while the eyes are turned to the side of the lesion; whereas in a similar lesion of a half of the cerebellum, attended with paresis of one side of the body and ocular displacement, the paralyzed limbs are those on the same side as the lesion, while the eyes are turned to the opposite side. In a lesion of the pons there is inability to turn the eyes away from the paralyzed limbs, while with a cerebellar lesion there is inability to turn the eyes toward the side of the paralyzed limbs. Russell's experimental results led him to conclude that displacement of the eyes, other than those already described, in a case presenting other evidence of cerebellar disease, pointed to implication of the middle lobe of this organ; but that with indications of increased intracranial tension in such cases, if inward displacement of one or both eyes was present, the possibility of this being due to pressure on the sixth nerves must not be lost sight of. Further possibilities are the secondary implication of the nuclei of ocular nerves by disease beginning in the cerebellum, or the secondary implication of the cerebellum by disease beginning in the nuclei of ocular nerves.

The Position of Repose of the Eyes.—Reboud (*Arch. d'ophthal.*, November, 1894) draws the following conclusions:

Uniocular Vision.—1. Experiments disclose rather the physiological habit of each eye than its position of repose.

2. Convergence is the rule, not in emmetropes and hypermetropes, but for each eye having good visual acuity and a distinct image by effort of accommodation.

3. Parallelism and divergence represent the majority of positions of repose. It is that of eyes which do not need to accommodate in order to secure a distinct image, or, having to make too constant and painful efforts, have renounced them, or which can not have it on account of insuperable obstacles, such as irregular astigmatism, or corneal opacities, or chorioiditis, or atrophy of the optic nerve.

Binocular Vision.—1. An equal acuity of vision of the two eyes is the best proof of their association and the surest guarantee of binocular vision; without it association is uncertain.

2. Astigmatism not only impairs the acuity of vision, but is the greatest obstacle to binocular vision.

3. Hypermetropic astigmatism, even with good visual acuity, does not favor convergence.

The Recurrent Images following Visual Impressions.—Bidwell (*Proceedings of the Royal Society*, lvi, No. 337, and *Ophth. Rev.*, November, 1894) records here the order of the visual phenomena as noticed by himself:

1. Immediately on the impact of the light, a sensation of luminosity was experienced, the intensity of which increased for about a sixtieth of a second; more rapidly toward the end of that period than at first.

2. Then ensued a sudden reaction, lasting also for about a sixtieth of a second, in virtue of which the retina became partially insensible to renewed or continuous luminous impressions. These two effects may be repeated in a diminished degree as often as three or four times.

3. The stage of fluctuation was succeeded by a sensation of steady luminosity, the intensity of which, however, was considerably below the mean of that experienced during the first sixtieth of a second.

4. After the external light had been shut off a sensation of diminishing luminosity continued for a short time, and was succeeded by a brief interval of darkness.

5. Then followed a sudden and clearly defined sensation of what might be called abnormal darkness, which lasted for about a sixtieth of a second and was followed by another interval of ordinary darkness.

6. Finally, in about four fifths of a second after the extinction of external light there occurred another transient impression of luminosity, generally violet colored, after which the uniformity of the darkness remained undisturbed.

The Physiology of the Diameter of the Pupil.—Schirmer (*Arch. für Ophthal.*, xl, 5) gives the following results of his investigations:

1. As changes in the external source of illumination cause pupillary reaction, while the retinal adaptive condition remains the same, so do alterations in the condition of retinal adaptation cause a contraction and dilatation of the pupil, while the source of external illumination remains unchanged.

2. With the greatest degree of accommodation the size of the pupil is the same for an illumination between a hundred and eleven hundred mk. power. This pupillary diameter Schirmer proposes to call the "physiological" diameter.

3. Hence, by exclusion of convergence, accommodation, and psychical and sensory irritation, the pupillary diameter and the pupillary reaction are dependent on the relation of the external source of illumination to the receptive condition of the retina.

Corectopia.—Best (*Arch. für Ophthal.*, xl, 4) draws the following conclusions from his observations:

1. The pupillary displacement may be single, and is then to be regarded as a pathological variation, or as the result of a defective development of the iris, or of an intra-uterine inflammation.

2. A tolerably rare complication is corectopia with cornea globosa and microphthalmia.

3. The combined displacement of pupil and lens is tolerably frequent and almost always bilateral. The pupil is generally displaced upward and outward. The lens is generally displaced in the opposite direction.

Bacteriological Investigations into the Ætiology of Keratitis and Conjunctivitis Eczematosa and Corneal Ulcers.—Bach (*Arch. für Ophthal.*, xli, 2) draws the following conclusions from his investigations:

1. Eczematous inflammations of the eyes are caused by pyogenic micro-organisms, especially the *Staphylococcus pyogenes aureus.*

2. In recent processes the particular microbe can generally be demonstrated.

3. By implantation of pyogenic bacteria typical artificial phlyctenules can be produced in the cornea and conjunctiva.

4. The eczematous processes frequently coexisting in other parts of the body can be traced to the same cause.

5. Hence there is a direct connection between eczema of the eyes and of other parts of the body.

6. With a similar ætiology of corneal ulcers, those ulcers situated in the central parts of the cornea are much more unfavorable in prognosis than those elsewhere, as there is almost always inflammation of the iris and the ciliary body present.

The Removal of Powder Grains from the Cornea and Skin by the Galvano-cautery.—Jackson (*Ophth. Rev.*, April, 1895) says that the impossibility of removing the diffused particles of charcoal without the destruction of the tissue through which they are diffused led him three years ago to resort to the use of the galvano-cautery as the means by which such destruction could be effected with most accurate limitation to the tissue involved. A small cautery tip is employed, kept at a white heat, and the points involved are touched in rapid succession, the contact being continued each time until it is thought that sufficient tissue has been destroyed. No after-treatment is required, and the sloughs come away in a few days with very little pain or irritation. The resulting scars cause a disfigurement quite insignificant in comparison with that left by the original injury, and it becomes less noticeable with time. The method of treatment should be applied as soon as practicable after the injury, in order that the diffusion may be as slight as possible.

Experimental Observations on the Staphylococcous Ulcer of the Cornea and its Treatment.—Bach (*Arch. für Ophthal.*, xli, 1) concludes from his experiments that in this form of eye disease subconjunctival injection of sublimate solutions is of absolutely no therapeutic value. On the contrary, the condition of irritation of the eye is always increased by these injections, and its duration is perceptibly lengthened. Bach has become convinced that in the staphylococcous ulcers of the cornea the bacteria are never present in the iris, anterior chamber, ciliary body, or any other part of the interior of the eye, unless the cornea has been perforated, or perforation has occurred through some other part of the eyeball. He believes that in this disease, when hypopyon is present, it is due to the exudation of a fibrous substance and of leucocytes from the vessels of the iris and ciliary body. When inflammation of the iris or ciliary body occurs in the course of corneal ulceration or severe inflammation of the conjunctiva, it is due to the distant action of bacteria, and is produced by the products of metabolism and protein compounds.

Electricity in the Treatment of Corneal Opacities.—Dennis (*Annals of Ophth. and Otol.*, iv, 1) thinks that where improvement is found from the use of electricity in corneal opacities, it is due to the direct irritation of the cornea caused by the stimulus of the current directly applied. He admits that there is some electrolytic action, but does not think it aids in clearing the tissue. The electrolysis is noticeable on the surface of a clear cornea if the current is too strong, or if the electrode is allowed to remain too long in one spot. There is then a distinct break in the superficial corneal layer. The treatment by this method seems to be adapted to all varieties of corneal opacity, though it is not always equally successful in results in all cases.

A New Method of Treatment for Vascularized Corneæ.—Scott (*Ophth. Rev.*, November, 1894) has devised a new method which he describes as follows: The eye having been anæsthetized by cocaine, the lids are held open by a speculum. A fair-sized magnifying glass is then held in one hand, and with the other all the vessels in the cornea and as many of their branches as possible are slit up along their entire length by means of a narrow Graefe's cataract knife. Each individual vessel having been thus opened along its whole length, it is almost impossible for any anastomosis to be established. It is always advisable, on account of the bleeding which obscures the corneal surface, to begin at the margin and work toward the centre of the cornea. The case is treated for a few days afterward as if it were a simple corneal abrasion.

The Role of Astigmatism in the Genesis of Cataract.—Roure (*Arch. d'ophtal.*, January, 1895) has found that in eighty per cent. of the cases, when the two eyes are unequally astigmatic, the eye first attacked by cataract is the most astigmatic. It is probable that astigmatism exerts an influence on the date of appearance of the cataract. He regards it as a condition favoring the development of the morbid process in the lens.

Removal of the Lens in High Myopia.—Wray (*Ophth. Rev.*, February, 1895) thinks the operation is not applicable in the case of children with less than D. 10, or in adults with less than D. 12 of myopia. The objects of the operation are to prevent detached retina, to arrest or prevent retino-chorioidal changes, and to enable patients with the highest grades of myopia to work at reading distance. He has seen a case of retinal detachment after the removal of a lens in a case of myopia of D. 30, and considers detachment comparatively frequent after operation. He considers the operation a success if it prevents progressive change in the fundus and enables patients to work at reading distance when otherwise unable to do so. He points out that in myopia of low degree, associated with zonular cataract, the crescent is at times out of all proportion to the amount of myopia, the presumption being that this is due to amblyopia, and on this presumption it was a common thing to remove zonular cataract when the patients could see $\frac{6}{24}$. Myopes of over D. 10 very seldom see more than $\frac{6}{18}$. With regard to the influence of the operation in preventing destructive changes in the chorioid and retina, the only case that appears to bear upon the point is Meyer's, in which, after the removal of a lamellar cataract, the changes in the fundus are said to have progressed. The point on which there is unanimity is that the patients were able to work much better after the operation, and some were enabled to follow vocations which had previously been impossible. If, however, vision is practically certain to get worse, it would seem wise not to wait until the nutrition of the macula has been seriously impaired. Floating opacities in the vitreous, especially if in any number, would contraindicate an operation, as would also diminished tension.

The Ripening of Immature Cataract by Direct Trituration.—Bettmann (*Ann. of Ophth. and Otol.*, i, 1) draws the following conclusions from his experience: 1. Artificial ripening of cataracts is in properly selected cases demanded. 2. Direct trituration is preferable to other methods. 3. It is not followed by any untoward symptoms, consequently it is a safe and reliable procedure. 4. It is not indicated where sclerosis involves the bulk of the lens. 5. It is especially useful in senile cataracts with soft cortex. 6. The results of the massage are marked and rapid. 7. Maturity of the cataract is usually induced in three weeks, often sooner. 8. Very little discomfort is caused to the patient. 9. At the subsequent extraction of the lens, the cortical substance is readily removed, and dangers of iritis and suppuration of the corneal wound are lessened.

Observations on Some Phases of Opacity of the Lens, and on Luxation.—Thompson (*Ophth. Rev.*, October, 1894) gives the following *résumé* of his observations:

1. Segmental opacities of the lower inner portions of the lens usually remain stationary for many years, and rarely cause blindness.

2. Annular opacity, or arcus senilis lentis, is often met with in persons under thirty years of age. Women are more subject to it than men. It rarely passes beyond the periphery until after middle life, when it sometimes extends in the form of a minute speckled opacity of the whole anterior surface of the lens, again becomes stationary, and seldom causes blindness.

3. Cataract is occasionally cured spontaneously by liquid degeneration within the capsule.

4. Congenital ectopia lentis is by no means a harmless anomaly. Its subjects are usually highly myopic, and have greatly reduced acuity of vision. It may cause loss of vision by glaucoma, and ultimately destroy the sight by luxation of the lens downward, thereby starting inflammatory action.

5. Spontaneous luxation downward of the cataractous lens of an elderly person often takes place. It gives temporary sight to the patient, but the end is usually suffering and loss of vision.

6. "Second sight" is a danger signal, and is often brought on by long-continued congestion of the fundus by a relaxed suspensory ligament, and by luxation of the lens forward.

The Pathogenesis of Sympathetic Ophthalmia.—Stricker (*Amer. Jour. of Ophthal.*, September, 1895, taken from the Cincinnati *Lancet-Clinic*) considers from all investigations on the subject that sympathetic ophthalmia is an infection of the second eye, the result of an infection of the first, the micro-organisms being carried along the subvaginal lymph space of the sheath of the optic nerve to the chiasm, and thence down the lymph space of the sheath of the optic nerve of the second eye. Every perforating wound from *whatever* cause opens the door for the entrance of pathogenic microbes, without which there can be no sympathetic ophthalmia. No specific organism has been found; but streptococci, staphylococci, and even short bacilli have been found, and no doubt the infection is a mixed one.

If the injury is severe and extensive, enucleate at once.

If the injury is slight, await developments, and if iridocyclitis or purulent inflammation sets in, enucleate at once.

If a foreign body is lodged in the eye and can not be extracted, enucleate.

If successfully extracted, determine if it is aseptic: if it is not aseptic, enucleation is indicated.

The Treatment of Purulent Ophthalmia by Formol.—Fromaget (*Ann. d'oc.*, February, 1895) reports very brilliant results from the use of formol, all his patients having recovered. He considers it an excellent antiseptic, but says it is

somewhat painful in the strength of 1 to 200. He recommends a strength of 1 to 2,000 as an irrigating fluid for the conjunctiva and as an aid to nitrate of silver.

The Treatment of Acute and Chronic Dacryocystitis with Rhinalgin.—Thomalla (*Ctrlbl. f. prakt. Aug.*, August, 1895) recommends the use of rhinalgin highly for the swollen mucous membrane of the lacrymal passages. His plan is to insert three times a day in the nostrils of these patients a small quantity of rhinalgin. The patient is then to lie down, and as soon as the rhinalgin begins to dissolve it is to be pushed farther back into the nostril until it is all absorbed. On the second or third day, as a rule, the condition of the sac and duct is much improved by a disappearance of the swelling in the mucous membrane lining the nose and nasal duct. If the case is chronic the treatment by rhinalgin must be kept up for weeks.

The Real Value of the Magnet for the Removal of Foreign Bodies from the Eye.—Purtscher (*Ctrlbl. f. prakt. Aug.*, April, 1895) agrees with Hürzeler that the value of the magnet in these cases by no means comes up to our expectations. Though the magnet may be strong enough to remove the foreign body from the interior of the eye, it can not remove the germs of infection carried into the eye with the particle of iron or steel. Still, the results of Hirschberg's operation are very favorable, and Hürzeler reports that among three hundred and thirteen magnet operations twenty-two per cent. retained more or less useful vision. Even with this very moderate percentage of favorable results it is our duty to attempt the removal of the foreign body by the magnet in every case.

Transplantation of a Strip of Skin into the Intermarginal Space of the Lids.—Knapp (*Ophth. Rev.*, July, 1895) recommends the following steps in operating for severe cases of entropion and trichiasis: 1. Ordinary canthoplasty. 2. Incision of the intermarginal space according to the Jaesche-Arlt method. 3. Curved incision of the skin three to four millimetres above the ciliary margin, and removal of a small strip of muscle along this incision. 4. Grooving of the tarsus according to Streatfield. 5. Passing sutures through the lower lip of the wound, the upper edge of the tarsus, and the skin of the upper lid. 6. Detaching from the upper lip of the wound with a straight pair of scissors a strip of skin two millimetres broad, as long as the incision in the intermarginal space, and implanting it in the gaping and cleansed incision and holding it in place with sutures. 7. Tying these sutures, cutting the threads short. 8. Dressing with bichloride gauze or leaving the eye uncovered. 9. Removing the sutures in from three to five days, and cleansing the eye every day.

The Radical Operative Treatment of Trichiasis.—Scott (*Ophthal. Rev.*, September, 1895) advises the following operation: A spatula is passed into the conjunctival fornix under the upper lid, which is then everted, and an incision is then made on the conjunctival surface parallel to and at a distance of two millimetres from the margin, dividing the tarsus completely in its whole thickness from end to end. The lid is then replaced in position, and its divided margin grasped between the blades of the forceps, which are carried upward so that the handle rests against the eyebrow, and thus forcibly everts the separated portion of the tarsus which carries the cilia. One needle armed with silver wire, about eighteen inches long, is sufficient for each lid. It is passed vertically downward through the skin surface of the centre of the lid into the substance of the upper portion of the tarsus, and emerging in the middle of its divided edge then enters the original anterior surface of the lower separated and everted portion of the tarsus, to be finally brought out on the free margin of the lid midway between the cilia and conjunctival edge. Two other sutures are similarly introduced, one toward each end of the lid. The opposing ends of these three sutures, which should be left long, are now separately twisted together firmly enough merely to retain the lid margin in its everted position. The forceps is then removed. The remaining part of the suture is now passed along in the tissue of the eyebrow from one extremity to the centre, at which point the corresponding twisted strands of wire are attached to it. The needle is reintroduced at the centre of the eyebrow close to its point of emergence, and is brought out at the opposite end, where the third remaining twisted suture is secured to it. The stitches may be removed on the fifth or seventh day.

A New Operation for Entropion and Trichiasis.—Lagleyze (*Arch. d'ophthal.*, October, 1895) recommends the following procedure: The lid is everted, and six needles are introduced through the conjunctival surface on a level with the upper border of the tarsus, and are brought out through the skin on a line with the cilia, thus passing between the tarsus and the skin. The needles remain *in situ*, without being entirely brought out, so that they maintain the lid everted. An incision is then made in the lid near the ciliary margin and parallel to it, through conjunctiva and tarsus, the incision being prolonged beyond the limits of the entropion on either side. The needles are then brought out entirely, and the sutures are tied so as to produce primarily a decided ectropion.

An Operation for Trichiasis.—Thier (*Ctrlbl. f. prakt. Aug.*, July, 1895) suggests the following operation: He first excises from any preferred portion of the lid between cilia and eyebrow a piece of skin of three millimetres in width and corresponding length, parallel to the lid margin. This is laid on an aseptic glass plate, and the resulting wound in the lid closed by sutures. The lid is then split into two laminæ three millimetres deep, so that *all* the cilia fall in the outer lamina. Before the strip of skin is inserted the stitches are first put in. One is introduced at the inner angle of the lid margin, passed across through the wound, and brought out at the external angle of the lid margin, so that the sutures pass entirely through the thickness of the lid. Three or four such sutures, which at first are left untied, are introduced at equal distances from each other, so that there are three or four loops. Under these loops the strip of skin is inserted, and as soon as it lies smoothly in place, the sutures are drawn tight and tied. The strip of skin heals rapidly in place. The bandage is to remain two or three days, and the sutures may be removed on the eighth day.

Abnormal Associated Movements of the Eyelids.—Sinclair (*Ophth. Rev.*, October, 1895) divides these cases into several *series*, as follows:

Series I.—Cases in which certain movements of the lower jaw are associated with an upward movement of the upper lid. This series is subdivided into four *groups*, as follows: Group 1. Cases of one-sided congenital ptosis in which the drooping lid is raised both when the mouth is opened and when the jaw is directed to the opposite side. Group 2. Cases of one-sided congenital ptosis in which the drooping lid is raised when the jaw is depressed, but is not raised with lateral movement of the jaw. Group 3. Cases of one-sided congenital ptosis in which the drooping lid is raised with lateral movement of the jaw, but not with simple opening of the mouth. Group 4. Cases in which similar associated movements of one upper lid with movements of the lower jaw occur, but in which there is no ptosis. The associated movement in this series is met with more frequently

on the left than on the right side. The explanation of this phenomenon offered by Sinclair is that the levator receives nerve supply from the nuclei of both third and fifth nerves.

Series II.—Cases in which contraction of the levator palpebræ superioris is associated with contraction of the rectus externus.

Series III.—Cases of paralysis or paresis of one external rectus, in which movement inward of the affected eye is associated with contraction of the orbicularis muscle and retraction of the globe.

A New Operation for Ptosis.—Mules (*Ophth. Rev.*, May, 1895) describes the principle of this operation as consisting in the substitution of the frontalis muscle for the levator palpebræ by the following method: Two needles with eyes near their points are passed deeply through the frontalis tendon over the eyebrow, and their points are brought out at the margin of the lid behind the lashes, taking up a substantial part of the tarsal cartilage on their way. A piece of silver wire is threaded through each needle, and the needles are then withdrawn, leaving the loop of wire passing from the brow to the edge of the lid and back to the brow again. These are then tightened until the lid is sufficiently raised, the edge of the lid being slightly grooved by an incision to allow the wire to sink into the substance of the lid. One end of the wire is then passed transversely under the skin, and made to emerge by the side of the other end of the wire. The two ends are then twisted on each other until the lid is raised permanently; the ends are then cut off, and the wire is allowed to sink below the level of the skin. The skin at this point and at the lid margin heals over the wire, which remains permanently fixed in the substance of the lid. The wire causes no irritation, the lids can be closed, and they remain closed during sleep.

Septic Irido-chorioiditis Consecutive to Uterine Hæmorrhage.—Valude (*Ann. d'oc.*, January, 1895) reports the case of a woman, about forty years old, who was affected by such a violent metrorrhagia that she was obliged to go to bed. The flow lasted three days and produced great prostration of the patient and caused high fever. There was no uterine infection of any kind, and there were no symptoms but the hæmorrhage. On the second day severe pain came on in the left eye, accompanied by redness and swelling. Conjunctival chemosis and exophthalmia became marked. The prostration was complicated by nausea and vomiting and the high fever continued. Vision of the left eye was completely lost in a few hours from the acute purulent iridochorioiditis, the result probably of thrombosis of some of the chorioidal vessels.

Glaucoma.—Koster (*Arch. f. Ophthal.*, xli, 2), after a long series of experiments on animal eyes, has come to the conclusion that all those theories of glaucoma which assume that the first cause of the disease is a condition of stasis in the venæ vorticosæ are not tenable.

Is Glaucoma curable without Operation?—Pilgrim (*Ann. of Ophth. and Otol.*, iv, 2) presents a brief for the employment of galvanism in simple chronic glaucoma. He does not contend that the cases are cured, or that glaucoma is ever cured in the sense in which that word is ordinarily used. But he maintains that the results of treatment without operation are certainly as good as any ever obtained with operative interference, and in some cases better. His only residuum of doubt he formulates interrogatively as follows: 1. Is the galvanic treatment the potential curative factor, or is it the pilocarpine which is also used in this treatment? 2. If neither, is it purely coincidental? 3. If coincidental, will a certain percentage of glaucomatous patients always recover spontaneously without any treatment; or, if not recover, will they improve to such an extent and the improvement persist sufficiently long to induce the belief that they are actually cured?

If the galvanic current is capable of causing absorption of a growth in the uterus many times larger than the human eyeball, is it unreasonable to believe it capable of absorbing the adhesions or whatever the occluding substance may be that prevents the proper filtering of the ocular fluids at the iris angle? The object sought is the restoration of physiological function, and to accomplish it two methods are usually presented: restoration of function by changing the perverted to a healthy nutrition, or the destruction of the products of malnutrition by surgical processes. With the galvanic current we accomplish both results simultaneously by its catalytic action. By its stimulating properties the current favorably modifies nutritive processes, and at the same time causes the disappearance of mal-products by absorption.

The Treatment of Simple Chronic Glaucoma.—Abadie (*Arch. d'ophthal.*, November, 1895) has given up all operative interference in chronic glaucoma, and recommends the systematic and prolonged use of meiotics. In addition, he gives internally potassium bromide associated with quinine sulphate, as follows: He gives every day for a month a dose of fifteen to thirty grains of bromide of potassium, and every other day from thirty to fifty cent grammes of quinine. A few drops of a solution of eserine or of pilocarpine, or the two combined, are instilled into the eyes once a day. At the end of a month the internal medication is suspended for eight days and is then resumed in the same, and kept up indefinitely as long as may be necessary.

Glaucoma after Cataract Operations.—Pagenstecher (*Kl. Mon. f. Aug.*, May, 1895) considers necessary two varieties of the process in these cases. First, those which appear directly after our extraction operations, and which therefore can be regarded as consequences of the operation; and, secondly, those which occur at a varying length of time after complete recovery from the operation and good use of the eye by the patient, and in this class of cases the extraction can not be regarded as the direct cause of the glaucomatous process.

The first variety is by no means a very rare occurrence during the healing process. It may occur in any eye without there having been any symptom of glaucoma at any previous period in the eye. The glaucomatous symptoms, however, are more apt to occur if the other eye has been attacked by glaucoma.

The glaucomatous processes met with after discission of cataracts in young people are by no means rare, and are best met by puncture of the anterior chamber and letting out the swollen lens matter. It is rarely necessary to perform an iridectomy in these cases.

In aphakial eyes, which have possessed acute vision and excellent working power for a long while, all forms of glaucoma may present themselves, and the method by which the extraction was done seems to exert very little influence in inducing or preventing the outbreak, except that those eyes in which the lens has been removed in its capsule seem to enjoy a greater immunity.

Miscellany.

The Medical Society of the State of Tennessee.—The sixty-third annual meeting will be held in Chattanooga on April 14th, 15th, and 16th, under the presidency of Dr. G. C. Savage, of Nashville. The programme includes the following

papers: Fractures of the Upper Extremity of the Radius, with Cases, by Dr. B. B. Cates, of Knoxville (to be discussed by Dr. G. A. Baxter, of Chattanooga, and Dr. W. B. Rogers, of Memphis); Diseases of the Accessory Cavities of the Nose, by Dr. G. M. Peavler, of Bristol (to be discussed by Dr. Frank Trester Smith, of Chattanooga, and Dr. G. H. Price, of Nashville); Some Observations on the Therapeutic Actions of Ergot, by Dr. W. C. Bilbro, of Murfreesboro (to be discussed by Dr. M. L. Bradley, of Sadlersville, and Dr. S. S. Duggan, of Unionville); Posterior Urethritis, by Dr. J. W. Handley, of Nashville (to be discussed by Dr. W. F. Glenn, of Nashville, and Dr. G. W. Seay, of Nashville); A Review of the Past and Present Pathology and Treatment of Uterine Displacements, by Dr. J. S. Nowlin, of Shelbyville; Retroflexion of the Uterus, with a Report of Cases, by Dr. G. B. Gillespie, of Covington; Shortening of the Round Ligaments of the Uterus, by Dr. M. C. McGannon, of Nashville (to be discussed by Dr. T. J. Crofford, of Memphis, Dr. C. E. Ristine, of Knoxville, and Dr. W. G. Bogart, of Chattanooga); Immediate Amputations, by Dr. T. J. Happel, of Trenton, and The Period for Amputation after Injury, by Dr. M. Bazemore, of Cleveland (to be discussed by Dr. Duncan Eve, of Nashville, and Dr. J. W. Hill, of Knoxville); Croup, by Dr. G. W. Moody, of Shelbyville (to be discussed by Dr. J. A. Witherspoon, of Nashville, and Dr. J. W. Brandeau, of Clarksville); A Report of a Case of Neurotic Bladder Trouble and Subsequent Pyelonephritis relieved by Nephrotomy, by Dr. J. B. F. Dice, of Morristown (to be discussed by Dr. J. W. Handley, of Nashville, and Dr. W. K. Vance, of Bristol); Gastric Dyspepsia, by Dr. K. S. Howlett, of Bigbyville (to be discussed by Dr. J. S. Cain, of Nashville, and Dr. J. A. Crook, of Jackson); The Use of the Bicycle, by Dr. Hazle Padgett, of Columbia (to be discussed by Dr. S. W. Sandford, of Union City, and Dr. G. D. Hayes, of Shelbyville); Cancer of the Breast, by Dr. S. S. Crockett, of Nashville; The Radical Operation for Cancer of the Breast, by Dr. H. J. Warmuth, of Smyrna (to be discussed by Dr. J. R. Buist, of Nashville, and Dr. G. M. Bazemore, of Cleveland); Professional Fads and Faddists, by W. K. Sheddan, of Williamsport (to be discussed by Dr. N. T. Dulaney, of Bristol, and Dr. J. B. Cowan, of Tullahoma); Constipation, by Dr. S. T. Hardison, of Lewisburg (to be discussed by Dr. J. S. Nowlin, of Shelbyville, and Dr. K. S. Howlett, of Bigbyville); Fissura in Ano, by Dr. A. B. Cooke, of Nashville (to be discussed by Dr. J. L. Watkins, of Nashville, and Dr. C. Holtzclaw, of Chattanooga); The Germ Theory of Disease, by Dr. C. M. Sebastian, of Martin (to be discussed by Dr. H. Berlin, of Chattanooga, and Dr. Larkin Smith, of Nashville); Sprained Ankles, by Dr. J. L. Crook, of Jackson (to be discussed by Dr. S. S. Briggs and Dr. C. L. Lewis, of Nashville); Mastoid Diseases, by Dr. N. C. Steele, of Chattanooga (to be discussed by Dr. L. B. Graddy, of Nashville, and Dr. G. M. Peavler, of Bristol); Medio-bilateral Lithotomy, by Dr. C. S. Briggs, of Nashville (to be discussed by Dr. Paul F. Eve, of Nashville, and Dr. B. B. Cates, of Knoxville); The Rational Treatment of Typhoid Fever, by Dr. J. A. Crook, of Jackson (to be discussed by Dr. A. M. Trawick, of Nashville, and Dr. T. R. Moss, of Dyersburg); Surgical Operations in the Aged, by Dr. C. A. Abernathy, of Pulaski (to be discussed by Dr. J. B. Murfree, of Murfreesboro, and Dr. R. J. McFall, of Cumberland City); The Anomalies of the Umbilical Cord, by Dr. W. S. Scott, of Dickson (to be discussed by Dr. J. Bunyan Stephens, of Nashville, and Dr. H. J. Warmuth, of Smyrna); The Art and Mystery of Medicine, by Dr. B. D. Bosworth, of Knoxville (to be discussed by Dr. G. W. Moody, of Shelbyville, and Dr. C. M. Sebastian, of Martin); The Surgery of the Pancreas, by Dr. Paul F. Eve, of Nashville (to be discussed by Dr. C. S. Briggs, of Nashville, and Dr. J. W. Hill, of Knoxville); Hypertrophy of the Prostate, by Dr. W. F. Glenn, of Nashville (to be discussed by Dr. J. B. F. Dice, of Morristown, and Dr. J. L. Crook, of Jackson); The Importance of Complete Post-partum Uterine Contraction for the Safety of the Mother, by Dr. J. R. Buist, of Nashville (to be discussed by Dr. W. D. Haggard, of Nashville, and Dr. C. W. Womack, of Chapel Hill); The Treatment of Injuries of the Brain, by D. Y. Winston, of Clarksville; The Indications for Trephining, by Dr. E. A. Neely, of Memphis (to be discussed by Dr. L. P. Barbour, of Tallahoma, and Dr. T. C. Murrel, of Winchester); A Report of a Case of Gallstones, by Dr. T. R. Moss, of Dyersburg (to be discussed by Dr. A. J. Swaney, of Gallatin, and Dr. I. A. McSwain, of Paris); Pernicious Malarial Fever, by Dr. C. W. Womack, of Chapel Hill (to be discussed by Dr. W. C. Bilbro, of Murfreesboro, and Dr. W. S. Scott, of Dickson); The Treatment of Hæmorrhoids, by Dr. H. R. Coston, of Fayetteville (to be discussed by Dr. A. B. Cooke and Dr. C. Brower, of Nashville); Vaginal Hysterectomy, by Dr. T. J. Crofford, of Memphis (to be discussed by Dr. C. E. Ristine, of Knoxville, and Dr. M. C. McGannon, of Nashville); Sciatica, by Dr. R. J. McFall, of Cumberland City; Sciatica, by Dr. S. W. Sandford, of Tabernacle (to be discussed by Dr. W. A. H. Coop, of Lawrenceburg, and Dr. W. A. Atchison, of Nashville); The History of a Lawsuit, by Dr. C. Holtzclaw, of Chattanooga (to be discussed by Dr. D. E. Nelson, of Chattanooga, and Dr. E. L. Deaderick, of Knoxville); The Röntgen Rays; Their Prospective Utility in Physiology, by Dr. G. W. Drake, of Chattanooga (to be discussed by Dr. Larkin Smith, of Nashville, and Dr. P. E. Walker, of Sevierville); Fracture of the Patella, by Dr. J. B. Murfree, of Murfreesboro (to be discussed by Dr. E. A. Neely, of Memphis, and Dr. W. K. Sheddan, of Williamsport); Asepsis and Antisepsis in Labor, by Dr. G. A. Baxter, of Chattanooga (to be discussed by Dr. W. L. Nichol, of Nashville, and Dr. N. S. Houser, of Sango); Mitral Regurgitation, by Dr. F. B. Reagor, of Flat Creek (to be discussed by Dr. C. B. Lee, of Hardin's Valley, and Dr. W. B. McCampbell, of Nashville); Consumption among the Colored Population of the Southern States, by Dr. G. W. Hubbard, of Nashville (to be discussed by Dr. J. J. Neely, of Bolivar, and Dr. G. R. Proctor, of Nashville); The Superiority of the Schwartz Modification of the Original Stache Operation for the Relief of the Otherwise Incurable Sequelæ of Chronic Purulent Otitis Media, by Dr. J. M. Allen, of Brownsville (to be discussed by Dr. Frank Trester Smith, of Chattanooga, and Dr. T. Hilliard Wood, of Nashville); and Medical Progress, its Helps and Hindrances, by Dr. G. C. Savage, of Nashville.

The Association of Military Surgeons of the United States.—The sixth annual meeting will be held in Philadelphia on May 12th, 13th, and 14th, under the presidency of Dr. Louis W. Read, of Norristown, Pa. The preliminary programme includes the following papers: The Physiology of Bathing and Swimming, by Dr. H. G. Beyer, of Annapolis; The Emergency Ration, by Dr. C. E. Woodruff, of Fort Assiniboine, Mont.; Experiments with Emergency Rations, and Tetanus resulting from Powder Burns, by Dr. Louis A. LaGarde, of Baltimore; The Effects of Cannon Firing and Explosion on the Ear, by Dr. Samuel Sexton, of New York; Instruction of the Hospital Corps, United States Army, by Dr. C. H. Alden, of St. Paul; The Better Type of Medical Officer, by Dr. A. A. Woodhull, of the army; A New Bullet Forceps, by Dr. N. Senn, of Chicago; The Annual Encampment, and What it Teaches the Surgeon of the National Guard, by Dr. J. J. Erwin, of Cleveland; The Vitality of the Cholera

Spirillum in its Relation to Certain Fruit Acids, by Dr. T. C. Craig, of Brooklyn; Is there a Necessity for Differences between the Standards of Physical Efficiency in the Regular Army and the National Guard? by Dr. Charles R. Greenleaf, of Washington; What is the Most Practicable Plan of Sanitary Organization for the United States Army? by Dr. J. Van R. Hoff, of Fort Columbus, N. Y.; The Effects of the New Gun in Field Service, by Dr. J. D. Griffith, of Kansas City; Notes and Comments on the French Field Sanitary Service, and What we may Learn from it, by Dr. Valery Havard, of Russell, Wyo.; The Modern Methods of Sewage Disposal as Applicable to Military Posts, by Dr. A. C. Girard, of Fort Douglas, Utah; Baths, Bathing, and Swimming for Soldiers, by Dr. H. L. Chase, of Brookline, Mass.; The Illustrated Travois, by Dr. W. C. Shannon, of Washington; Some Thoughts in Regard to Wheeled Vehicles for the Transport of the Wounded, by Dr. George W. Adair, of Fort Robinson, Neb.; What Standard of Visual Acuity should be Required of the Enlisted Men of our Military Services? by Dr. J. M. Banister, of Fort Stanton, N. M.; The Methods of Caring for the Wounded in Field and Hospital of the Chinese and Japanese Armies, by Dr. C. U. Gravatt, of New York; Synopsis of a Report of the Medico-military Arrangements of the Japanese Army in the Field, 1894 and 1895, made to the Director-General of the British Army Medical Department by Colonel W. Taylor, Surgeon, Army Medical Staff, by Dr. Dallas Bache, of Omaha; Problems in Medical Administration, with Solutions, accompanied by Suggestions as to the Application of this Method to the Instruction of the Medical Officers of the National Guard, by Dr. Dallas Bache; The Epidemiological Features of the Late Epidemics of Plague in China and of Cholera in Japan, by Dr. W. F. Arnold, of the navy; Recent Advances in Anthropology applied to the Physical Examination of Recruits, by Dr. P. J. Harvey, of Plattsburgh Barracks, N. Y.; A General Consideration of Athletics, their Value in the Training of Soldiers, by Dr. W. A. Brooks, of Boston; Outlines of the Sanitary Organization of the Army of Denmark, by Dr. John Van R. Hoff; Co-operation in Public Sanitation, by Dr. J. C. Wise, of Newport, R. I.

The National Confederation of State Medical Examining and Licensing Boards.—The sixth annual meeting of this organization will be held in Atlanta, Ga., on Monday, May 4th, at which the following programme will be carried out: The President's Address, by Dr. William Warren Potter, of Buffalo; Preliminary Education, Training, and Practice in New York, by Mr. James Russell Parsons, Jr., of Albany; The Limitations of the Standard of Modern Educational Requirements, as Determined by State Medical Examining Boards, by Dr. Joseph M. Mathews, of Louisville; and Some Obstacles to an Inter-State Recognition of a State License to Practise Medicine, with Suggestions for their Removal, by Dr. Charles McIntire, of Easton, Pa. Dr. William S. Foster, of Pittsburgh, will read a paper the subject of which is to be announced.

The Causes of Death of Prominent Persons.—In the *Journal of the American Medical Association* for March 28th Dr. Ralph S. Michel writes that he has thought it would be of interest to make a collection of facts in regard to the deaths of celebrated persons. It was impossible, he says, to ascertain the cause of death in many instances, for frequently it was not known or stated; in many cases it was given simply as a fever. The following he believes to be quite accurate:

Early in the spring of 1616 Shakespeare and his boon companions, Ben Jonson and Michael Drayton, spent the evening at a tavern at New Place. All became too much intoxicated to reach home, and they remained out all night on the ground. The consequence to Shakespeare was a fever of which he died in a few days. It was undoubtedly pneumonia, Dr. Michel thinks.

Lord Bacon died at the age of sixty-five, a martyr to science. While he was riding, one winter day, it occurred to him that snow would preserve flesh as well as salt. Accordingly he alighted, bought a hen, and stuffed it with snow. While doing this he became very much chilled and was too sick to return home. He stopped at a friend's house, where he was put into a cold, damp room, and he died in a few days, probably of pneumonia.

Burton, the author of *The Anatomy of Melancholy*, believed in astrology. He calculated the time of his death by the stars, and he died at the time assigned, but he was suspected of taking something to hasten it in order to make it conform to his calculation.

Ben Jonson had several attacks of apoplexy. As a consequence his mental faculties became much impaired, and his last days were dark and gloomy.

Motherwell died at the age of thirty-eight, of apoplexy.

Benjamin Franklin had gout, also cystic calculus, and the attendant inflammation of the bladder confined him to bed for a year. He was then eighty-four years of age. The immediate cause of his death was abscess of the lung.

Washington, at sixty-seven years of age, died of acute laryngitis complicated with œdema of the glottis. On December 12, 1799, he rode over his estate on horseback, and, as it was a day of rain and sleet, he became thoroughly chilled. He contracted a severe cold, and at the end of two days was very sick. Before sending for a doctor he had his overseer bleed him. When the doctor came he bled him again. As there was no improvement, a consulting physician was called in, and again he was bled. Finally, they gave him tartar emetic and calomel; they also applied fly blisters to his throat. This medical treatment has been the subject of much criticism, Dr. Michel remarks.

Edward Gibbon, the historian, had the largest hydrocele on record—as large as a bucket. Repeated operations for relief exhausted him, and he died of a fever brought on thereby at the age of fifty-seven.

Napoleon died of cancer of the stomach.

Thomas Gray, author of An Elegy Written in a Country Churchyard, died at the age of fifty-five. He was subject to hereditary gout. One day, at dinner, he was taken suddenly and violently sick with pain in the stomach, and died on the sixth day.

William Collins, the poet, died at thirty-six years of age of paresis or insanity, brought on by dissolute and intemperate habits.

Akenside died suddenly at forty-nine years of age of diphtheria.

Burns died at the age of thirty-seven. Of convivial habits, he perished from drink and exposure. One day in January, 1796, he dined at a tavern in Dumfries. He was barely convalescent from a spell of sickness, and was in no condition to stand exposure. The night was cold, and Burns, wandering homeward in an intoxicated condition, sat down upon a doorstep and fell asleep. Rheumatism supervened, and, although he lived until the next July, he never recovered. During the last few days of his life he was in a state of low muttering delirium.

Byron was born with clubfoot. His mother, who was a misanthrope, always spoke of him as a lame brat. This defect was finally remedied to the extent of enabling him to wear a

common boot. He early showed signs of obesity. This was to him a matter of much chagrin, and he combated the tendency by very low diet, and medicine. He died in Greece at the age of thirty-six, of heart complication, which set in during an attack of acute inflammatory rheumatism. Death was sudden.

Oliver Goldsmith died at forty-five years of age. He was a man of somewhat irregular habits, and was attacked with dysuria, probably amounting to strangury. His death was attributed to James's powders, which he would take, contrary to the advice of his physician. But, as he died of strong convulsions, it is likely death was caused by uræmia. James's powder was a secret remedy. It can not now be prepared as it was by Dr. James, says Dr. Michel, owing to ambiguity in the specifications placed on file in the Court of Chancery. But it is composed of antimonious acid and phosphate of calcium, with some sesquioxide of antimony. Dr. James was contemporary with Goldsmith, and the powder he used was probably prepared by Dr. James himself. If Goldsmith had perished from an overdose of it, his symptoms would have been vomiting, purging, and collapse.

James Beattie died of palsy.

Robert Fergusson, who was intemperate, died insane.

Chatterton died at the age of seventeen, of arsenical poisoning—a suicide. He was driven to the act by poverty and neglect.

Falconer, the author of *Shipwreck*, was drowned by the foundering of a ship off the east coast of Africa.

Martin Luther died of violent inflammation in his stomach.

Cromwell died of remittent fever.

John Leyden died of the same fever in Java.

Sir Walter Scott had several strokes of apoplexy. His memory failed, and softening supervened. The end came at sixty-one years of age.

Shelley was drowned by the capsizing of a boat in the bay of Spezia.

Keats and Charles Wolfe both died of consumption.

Voltaire died of strangury, probably due to enlarged prostate. Very much has been said, says Dr. Michel, by ecclesiastics about the agony of his last days, as though it was a judgment for his outspoken agnosticism. In the days of 1778, when this condition received no treatment worthy of the name, what physician would doubt that the last days of Voltaire, who died when he was eighty-four years old, of strangury, must of necessity have been agonizing?

Galileo had stone in the bladder. With care, says Dr. Michel, he might have lived to shed upon that benighted time the rays of his intellectuality much longer. But he and the church differed on astronomy. Galileo asserted that the earth traveled around the sun. The church would brook no such heresy. Galileo was dragged out in winter, jolted over rough roads in bad weather, to appear before the Inquisition. Exposure, imprisonment, and ill usage killed him—a martyr to progress.

John Milton died at sixty-five years of age of gout fever, or gout struck in, as it was called—our retrocedent gout.

John Bunyan rode home in a heavy rain, took a fever, and died.

Sir Isaac Newton was long a sufferer from gout and stone in the bladder. He is supposed to have died from the latter.

Dean Swift once pointed to a dying tree, and said: "I shall be like that tree—I shall die at the top." He had Ménière's disease, which produced paralysis, then aphasia, and finally a decay of all the mental faculties. He lived a year without speaking a word.

Edgar A. Poe was picked up in the streets of Baltimore one morning in 1849, and taken to a hospital, where he died without regaining consciousness. His death was attributed to drink and exposure. There has always been a suspicion that he may have been the victim of an assault. He was thirty-eight years old at the time of his death.

Letitia E. Landon—L. E. L.—died of an overdose of prussic acid.

Washington Irving died at seventy-six years of age, suddenly, of disease of the heart, in his own Sleepy Hollow.

Racial Anatomical Peculiarities.—At a recent meeting of the Anthropological Society of Washington, a report of which is published in the April number of the *American Anthropologist*, Dr. D. K. Shute read a paper on this subject in which he said that the structural peculiarities of different peoples had interested him greatly since an early period in his anatomical studies when, as prosector to the chair of anatomy in the Columbian Medical School, he found in the human subject the rare muscle known as the levator claviculæ, and listened with pleasure to the enthusiastic explanation of its significance given by Dr. Elliott Coues, the distinguished ornithologist, then professor of anatomy at that school.

During the whole course of his teaching, said Dr. Shute, Dr. Coues always insisted upon the importance of studying variations, and his influence still continued in the school, for demonstrators and students were always requested to report at once any deviations from the normal structure that they might find in the course of their dissections.

In Washington there was an excellent opportunity to study structural peculiarities in a race, the negro differing in many interesting respects from the Caucasian.

All students of ethnology recognized readily such obtrusive structural peculiarities as the color of the skin, the character of the hair, and the physiognomy; they also knew, in connection with the latter factor, how craniology had been invoked to discriminate between races.

But cranial as well as other measurements of the body showed considerable variations in the relative proportions of parts within the same race, a fact, said the author, which had led many to think that ethnologists had made too much of such measurements—had often given them undeserved prominence and applied them too frequently to the exclusion of other elements.

Cranial capacity, for instance, was not indicative of race in individuals; it was only of value as an induction based on an examination of large numbers of skulls; and even here it was only important when taken in connection with other features. To say that a skull belonged to a high race instead of a low one, for instance, because it was megacephalic was entirely misleading; but to say that a high race would contain a larger percentage of megacephalic skulls than a low one was not only true, but helpful to the ethnologist.

As bearing in an interesting and instructive manner, said Dr. Shute, upon the question of racial anatomical peculiarities, a study of the present evolution of man was important. Man apparently was undergoing at present a comparatively rapid development, almost as rapid, it had been observed, as was that of the horse from eocene times.

In this evolution of the races or subspecies of man, sexual selection had been a potent factor in producing the more glaring anatomical peculiarities, such as the color of the skin, the amount and character of the hair, and its distribution over the body; but also use and disuse accounted for many of the less obtrusive ones.

This latter statement brought us, he thought, to questions at issue between Weismann and Spencer as to the transmission of acquired characters.

Some of the regions in which evolution might be said to be now going on were as follows: the skull, in which the face was decreasing in size, with early closure of sutures, while the cranium was increasing in size, with late closure of sutures.

The canine teeth had comparatively recently been reduced in size and the third molar teeth were tending to disappear.

The assumption of the upright posture had led and was still leading to an interesting series of correlated changes in the thorax, the pelvis, and the lumbar vertebræ.

This posture had shifted the weight of the abdominal viscera from the thorax to the pelvis, and we found in consonance with this fact the eighth, ninth, and tenth ribs were reduced in size, the twelfth rib tended to disappear, and also the last lumbar vertebra tended to fuse with the sacrum, thus tilting the pelvis up still farther.

In reference to this subject, said the author, Professor Osborn had suggested that it would be interesting to note the condition of the ribs in some of the large-bellied tribes of the Africans. Rosenberg predicted that the man of the remote future would probably have but twenty-three free vertebræ.

The curvatures of the spinal column were tending to increase.

The pelvis in the female, in correlation with the augmenting cranium, was increasing in size and thus diverging more and more from the male type.

The bones of the big toe, through use, were tending to increase in size, while those of the little toe, through disuse, were tending to decrease, with reduction of the number of phalanges by ankylosis.

In the study of these and other portions of the body that might be considered as still undergoing an evolution, it was important, he said, to note in the different races the degrees of divergence presented from the ordinary normal type and the percentage of relapse into more primitive conditions.

As the muscular system offered a degree of plasticity not found in the harder tissues, he was strongly inclined to think that the study of its variations must be fraught with instruction and interest. But in the study of these variations, he said, a sharp distinction must be made between those that were atavistic (the levator claviculæ, dorso-epitrochlearis, etc.) and those that were prophetic (*e. g.*, the occasional appearance of a double abductor pollicis and the occasional absence of the palmaris longus); also, in the study of all variations, whether muscular or not, due care must be exercised in eliminating fortuitous cases—sports or monstrosities—such as supernumerary digits and incisors.

In this study of atavistic structures percentages of relapse might throw important light on racial structural peculiarities.

Muscular racial variations were most instructively investigated in those organs that were distinctively human, such as the hand and the foot.

As man descended from arboreal, quadrumanous animals, his assumption of the upright posture had led to specialization in two different directions—the thoracic extremity for prehension and the pelvic one for locomotion.

On the one hand, man's thoracic extremity (especially his hand), having been used for vastly more diverse and complicated purposes than that of his simian ancestors, had undergone greater specialization; for instance, the extensor secundi internodii pollicis was completely separated from the extensor indicis; the flexor longus pollicis was detached from the flexor profundus digitorum; also the extensor minimi digiti had withdrawn its additional tendons from the third and fourth digits and was now restricted to the little finger. The extensor primi internodii pollicis was separated from the extensor ossis metacarpi pollicis, etc. On the other hand, the muscles of man's foot, which in his simian ancestors had been concerned in making his foot prehensile as well as locomotor, were, through disuse, undergoing atrophy and disappearance (*e. g.*, the adductor and abductor hallucis and the flexor brevis minimi digiti) where they were not generalizing by fusing (*e. g.*, the flexor longus hallucis with the flexor longus digitorum).

The opponens hallucis was a muscle that was found normally only in the orang. It occasionally occurred in man as a reversion.

Therefore, said Dr. Shute, in view of these facts, the following question was an interesting one: Do the different races in respect to these structures present different percentages of reversion to the simian characteristics?

It was interesting to note in this connection that percentages of reversion in *osseous* structures differed in different races and epochs. For instance, it had been observed that the intercondylar foramen was present in a little over three per cent. of the skeletons of the present time; in a little over five per cent. of those that belonged to the time from the fourth to the tenth centuries; in twenty-four per cent. of those belonging to the Dolmen period; and, finally, in thirty per cent. of those of the Reindeer period.

Again, the third trochanter of the femur had been found in one per cent. of our race; in thirty-seven per cent. among the Swedes; in fifty per cent. of the Sioux, and in sixty-four per cent. among the Laplanders.

In the light of these facts, Dr. Shute thought that a wider study of muscular variations in different peoples would present an interesting and instructive field for the investigation of racial anatomical peculiarities.

He mentioned some of the anatomical peculiarities which, he said, taken together, stamped a race as high or low—viz., cranial sutures that were simple in arrangement and united early; a wide nasal aperture, with the nasal bones ankylosed; undue projection of the jaws and receding chin; well-developed wisdom teeth appearing early and permanent; a humerus of undue length and perforated; an elongated calcaneum; a small calf of the leg; a flattened tibia; a narrow pelvis, etc.

These characteristics were simioid, and the races possessing them in the largest number and development were the lowest in the scale.

Measured by these criteria, the Caucasian stood at the head of the racial scale and the negro at the foot.

The Treatment of Pelvic Exudations in Women.—The *Revue internationale de médecine et de chirurgie* for March 25th publishes an abstract of an article from the *Semaine médicale* in which the author remarks that when a pelvic exudation follows confinement or results from an infection, either operative or caused by a lesion of the annexa, we should at first restrict ourselves to a purely medical treatment. Absolute rest in bed, the constant application of an ice-bag on the abdomen, and, when the fever has ceased, covering the abdomen with a broad wet compress, are the principal measures to which we should have recourse in cases of this kind. Opium, says the author, may be employed in doses of half a grain three times a day, either by the mouth or in suppositories; if the pains are peculiarly intense, an injection of morphine may be given every night. Under the influence of this treatment he says, the inflammatory symptoms will diminish gradually, and frequently the exudation will completely disappear.

Often, however, it persists, or rather, after having disappeared, it returns and sometimes resists medical treatment. In this case it becomes a question of operative treatment. M. Buschbeck and M. Ettinger, says the author, arrived at the conclusion, after an experience with thirty-three cases in which operation was successful, that operative intervention was indicated in all cases in which the fever and the exudation did not disappear after several weeks of medical treatment.

The region where the operation is to be done, says the author, varies according to the anatomical situation of the abscess. If pus accumulates in Douglas's *cul-de-sac*, it is in this region that the incision should be made, and the tissues carefully divided layer by layer. The blood-vessels of the vagina and of the purulent sac often give rise to an abundant hæmorrhage, which must be arrested before going on with the operation. Membranous outgrowths on the wall of the cavity of the abscess should be destroyed. The sac is then washed with a solution of boric acid and salicylic acid and tamponed with iodoformed gauze or simply sterilized. If the walls are rigid, a glass or rubber drain is introduced. The subsequent treatment consists in rest in bed, daily washing out of the sac with weak antiseptic solutions, and, if necessary, fresh tampons. The incision should be kept open while there is still any secretion. If the exudation takes place between the abdominal walls and the peritonæum, the incision should be made from two to three finger-breadths above Poupart's ligament and parallel with it. It should be about three inches in length, in order to permit of easy inspection of all the tissues. Layer by layer is penetrated slowly, and as the blood-vessels are cut hæmostatic forceps are applied to them. If the epigastric artery is met with, it should be tied and cut. After the abscess has been opened the cavity is washed and tamponed. Occasionally the cutaneous wound is partly closed by means of points of suture.

Sometimes, says the author, the situation of the purulent collection can not be exactly determined, and we are then obliged to substitute laparotomy by extraperitoneal incision; but this, he says, is rare.

When it is a question of old exudations which are dense and present no fluctuation, the operation is painful and it is difficult to open a passage through the thick, hard, and pseudomembranous masses to the centre of the collection of pus, where the cavity is sometimes found to be small and filled with concrete pus or turbid serosity in which streptococci have been found in abundance. It is important to evacuate the pus or the serosity and to disinfect the cavity, for, according to Buschbeck and Ettinger, this procedure suppresses the fever and leads more or less rapidly to a cure.

The fact of the presence of serum rich in streptococci within old pelvic exudations, says the author, is a cause for reflection in regard to the dangers which massage may present in these conditions, as it is so frequently employed in the treatment of cases of this kind.

Itching of the Anus.—In the *Journal des praticiens* for March 21st there is an article on this subject by M. L. Brocq. Anal pruritus, he says, is characterized by sufferings of a peculiar intensity, which consist occasionally in burning sensations and shooting pains, but more particularly in intolerable itching, which may be constant, but more frequently it is paroxysmal. The paroxysms sometimes become so violent that they lead to veritable nervous attacks.

In order to allay these attacks, says M. Brocq, local applications of a decoction of marshmallow, poppy capsules, or coca leaves, as hot as the patient is able to stand it, should be employed. If these applications do not bring sufficient relief, the following may be added to the decoctions: Vinegar, lead water, *coaltar saponiné*, carbolic acid, chloral, or corrosive sublimate. Applications of ointments containing menthol or guaiacol, very rarely cocaine, sometimes give relief; it is the same with suppositories of cacao butter containing belladonna or cocaine. In very obstinate cases, says the author, deep cauterization of the diseased parts has been tried, not only with silver nitrate, but even with the electro-cautery or the thermo-cautery. Scarifications and the division of nerves, which give such good results in pruritus of the scrotum and in vulvar pruritus, also find their indication in anal pruritus. Generally, it is well to keep the affected region constantly powdered; the majority of patients have noticed that the pruritus is less intense when the parts are kept in a state of perfect dryness.

According to the author, however, these local applications are only palliative measures, and, in order to effect a permanent cure, we must turn our attention to the neuralgic and neurotic element. A strict general hygiene should be prescribed, with absolute avoidance of fatigue and excesses of all sorts, and especially physical and mental strain. With regard to the diet, all stimulants, such as tobacco, coffee, tea, wines, etc., and rich foods, such as pastry, preserves, game, cheese, etc., should be avoided.

The intestinal functions should be carefully watched, as constipation and diarrhœa are equally unfavorable in their consequences. If antipyrine is well tolerated by the patient, it is occasionally an excellent drug for allaying the attacks of pruritus. The author prescribes it in the following manner: Eight grains before dinner and eight grains on going to bed; the dose may be doubled if it is necessary. When that is not well borne, carbolic acid in doses of from four fifths of a grain to eight grains a day, alone or associated with tincture of gelsemium, cannabis indica, and hamamelis, in order to act at the same time on the nervous element and on the hæmorrhoidal congestion.

Valerian in all its forms, says M. Brocq, has seemed to him the most useful drug in the treatment of this affection, but the treatment that has given him the best results consists in the employment of hot sedative douches and electricity. If it is absolutely impossible to use the former, he says, very hot applications on the spinal column may be resorted to and prolonged for several minutes once or twice a day. Electricity, he thinks, is superior in its results to hot douches, and he has seen it result successfully when hydrotherapy failed entirely. Static electricity, he says, is to be especially recommended in these cases under the form of the electric breeze, but good results have also been obtained with electric baths with the sinusoidal current.

"Privileged Communications" to Professional Men.—Under this heading the *Boston Medical and Surgical Journal* gives an outline of the facts in the Playfair slander case, and feels impelled to say most emphatically that, provided the report is accurate, the jury must have found in favor of the plaintiff. Our contemporary then goes on to say:

"Now, why does this trial in London concern us here, beyond its affecting the interests of an able and distinguished practitioner, well known personally to some and by reputation to us all; and why have we given a statement of the case? Not to gratify idle curiosity, but because it furnishes a useful opportunity for some much-needed remarks in regard to the most undesirable situation in our own country which is accorded by the courts to 'privileged communications.'

"That 'privileged communications' should be inviolable, except perhaps in criminal cases involving questions of life and death, is, we believe, a proposition which would be upheld everywhere in this country by the so-called 'learned professions.' How is this very important question actually treated by the courts? First of all, in regard to our own, the medical profession, there is an utter and pernicious absence of uniformity in the various States of the Union. In the State of Massachusetts, for instance, we are ashamed to say, the 'doctor' is *not* protected by the court in his refusal to reveal a professional secret—a 'privileged communication.' He may preserve his professional honor untarnished and go to jail for it. In New York, on the other hand, and in Michigan, for example, the 'doctor' is not only protected by the court in his refusal to betray a professional secret, but punished if he answers a question involving such betrayal.

"The priest, certainly in Massachusetts, finds himself in the same position as the 'doctor.' But the lawyer, for some fiction best understood by the legal profession, is, in all our States, we believe, a privileged personage for privileged communications. Theoretically and practically, there undoubtedly should be uniformity in practice in the courts of the different States in regard to this matter, and there should be uniformity in the treatment of the three professions we have cited.

"We are not forgetful of the difficulties which have been experienced in France, for instance, in accurately defining what is and what is not 'privileged'; in our own country, however, there is [are?] both this difficulty of definition, which after all should not be insuperable, and the absence of uniformity to be contended with. When will the legal profession not only permit, but encourage a reform?

"The verdict with which we began these remarks as a text suggests the present abnormal and unenviable position of the medical adviser, at least in Massachusetts: If he privately makes use of knowledge acquired in a professional capacity to guard the honor or protect the interests of members of his own family, he is liable to severe punishment, and yet the same knowledge which should be secret and should be privileged is, in a public trial at law, at the mercy of opposing counsel and the court. Is this as it should be? Do not the best interests of the public, of the medical profession, of the clergy, demand some change in the direction of consistency, of greater national and professional uniformity in the provisions of the law?"

The Heart Diseases of the "Menarche."—Kisch (*Berlin. klin. Woch.*, 1895, No. 39; *Ctrlbl. f. Gynäk.*, March 21, 1896) writes of the disorders of the heart that occur in young girls at about the time of the first menstruation, which time of life he terms the "menarche." He divides them into these three groups:

1. Nervous palpitation and paroxysmal tachycardia in girls who are otherwise healthy. They occur before menstruation and subside in a short time after it.

2. Cardiac affections in chlorotic girls whose chlorosis is connected with the changes incident to puberty.

3. Hypertrophy of the heart developed at the time of the first menstruation and consequent on the circulatory disturbances which accompany it. This is favored by the girl's rapid growth and by unhygienic dressing, especially in the matter of the corset.

Saligenin in the Treatment of Acute Rheumatism.—Dr. L. Lederer, of Munich (*Münch. med. Woch.*, 1895, No. 7; *Dtsch. Med.-Ztg.*, March 12, 1896), says that salicin consists of saligenin and glucose, into which it splits up in the system, and that saligenin is the active principle. Saligenin has been tested in cases of acute rheumatism, and has been found a very efficient remedy. It is speedy and sure in its action, and thus far it has been observed to be free from unpleasant effects. The author gives the histories of eight cases of acute articular inflammation in which saligenin was used, and says that in such cases, no matter whether they are of a rheumatic or of a gouty nature, the inflammation is promptly brought to an end. The unpleasant effects of salicylic acid, such as the sickish-sweet taste, ringing in the ears, disturbed digestion, blueness of the lips, etc., are not experienced, and the sweating is hardly noteworthy. According to the severity of the case, Lederer orders from seven to fifteen grains of saligenin, in the form of powder, to be taken every hour or every two hours. As saligenin dissolves readily in alkaline juices, the author thinks it would prove highly serviceable in such other diseases as typhoid fever, cholera, influenza, malarial fevers, dysentery, etc., in which salicin has been employed.

The Buffalo Academy of Medicine.—At the last meeting of the Section in Surgery, on Tuesday evening, the 7th inst., the following papers were to be read: The Value of Extension and Counter-extension in the Treatment of Fracture of the Surgical Neck of the Humerus, with a Report of a Case, by Dr. J. W. Grosvenor; and The Surgical Treatment of Vocal Disability, by Dr. F. W. Hinkel.

Potassium Chlorate in the Treatment of Tumors of the Mouth.—At a recent meeting of the *Académie de médecine*, a report of which is published in the *Presse médicale* for March 18th, M. Dumontpallier stated that he had had occasion to employ this treatment in three cases in which the gums and the tongue had been the seat of tumors the aspect and progress of which had presented a certain gravity. The results had been so successful that he felt justified in relating the histories of these cases, of which the following was an example: The patient had been operated on for epithelioma of the right lateral border of the tongue, and when the author saw him, two weeks after the operation, his general condition seemed alarming; prostration was very pronounced and there were frequent chills. Purgatives, quinine sulphate, and lavage with boric-acid water were prescribed, and shortly afterward the patient seemed to be convalescing. A few days later, however, a recurrent nodule was discovered near the cicatrix, and cauterization with silver nitrate was practised three times at intervals of several days, but the epithelial nodule increased.

At this time M. Dumontpallier saw the patient and made an examination of the tumor, which had developed rapidly, and found that it was situated on the right border of the tongue, about five centimetres from the end of the organ. In size and shape it was like a large bean, and papillomatous in appearance. It was sessile and adherent, and it had caused much annoyance and pain on mastication. There was no submaxillary adenopathy. The author prescribed potassium chlorate as a local application in the form of powder, which was to be applied six times a day. At the same time a solution of sixty grains of the potassium salt in four ounces and a half of water was to be given in doses of a tablespoonful every four hours. In this way, said the author, the tumor was kept under the constant influence of the drug, as it was freely eliminated by the saliva. This treatment had been continued regularly for six weeks, and at the end of that time the tumor had been reduced to half of its original size, and three weeks later there existed only two small protuberances, which were not painful. About two months afterward M. Dumontpallier saw the patient again, and found only three whitish,

shining cicatricial bands corresponding to the course of the operative wound. At the present time recovery was complete.

M. Dumontpallier said that the favorable results had certainly been due to the use of the potassium chlorate, and that its elimination by the salivary secretion had acted continually on the diseased surface. He recommended this drug in cases of tumor of the mouth, in which the diagnosis was often doubtful, and thought it ought to be given a trial before resorting to the bistoury. In order, he said, to bring about good results from this treatment, it should be continued for two or three months; it was also absolutely necessary to be assured of the functional regularity of the kidneys, which, with the salivary glands, were the principal organs of its elimination. It was also prudent to ascertain if the condition of the teeth was not a cause of irritation to the affected surface, and to institute the proper treatment.

Coronillin.—This drug, says a writer in the *Journal des praticiens* for March 28th, acts like digitalin in causing death by arresting the heart in systole. If the dose is a little smaller it diminishes the arterial pressure, the pulse becomes irregular, and death supervenes. Toxic doses increase the blood pressure while producing diuresis, and slacken the cardiac beats. Coronillin, says the writer, has been recommended for affections of the heart by Cardat, Spillmann, and Haushalter, who noticed that the experimental physiological action was verified in therapeutics.

Coronilla increases the force of the heart, diminishes œdema, increases diuresis, and ameliorates dyspnœa, but it has no influence at all when the muscular substance of the heart is degenerated. Poulet, says the writer, found, moreover, that this drug possessed the advantage of not causing vomiting or diarrhœa; that it was well borne, and that it diminished the painful symptoms of cardiac affections. Hochhalt is said to have employed it successfully in the febrile forms of pulmonary phthisis. It may be prescribed as follows: 1. The extract of coronilla, in doses of from six to fifteen grains a day. 2. The alcoholic tincture, in potions containing from forty-five to sixty grains. 3. Coronillin, in doses of from three to four grains a day. The preparations of coronilla, says the writer, should be given in small divided doses during the day.

Paraldehyde in Asthma.—In the *British Medical Journal* for March 21st Mr. Frederick P. Hearder calls attention to the antispasmodic action of this drug in asthma. He states that he has used it, with good effect, in about thirty cases of asthma, including ordinary spasmodic asthma, asthma with epilepsy, with heart disease, with renal disease, and with chronic bronchitis, and in two cases of asthma with pneumonia.

In the majority of the cases, he says, relief was rapid and complete, and in the remainder the distress was lessened. The dose employed was from forty-five to sixty minims, and one dose was usually sufficient; a few patients, however, needed a further dose of from thirty to forty-five minims an hour or so later. The hypnotic action of the drug, also, is of great service, as in so many cases of asthma the attack comes on in the evening or during the night.

In using these doses, the author has never observed any untoward action of the drug, but, on the contrary, the breathing has gradually become easy and normal, the pulse steadied and strengthened, and the patient has fallen into a comfortable sleep.

A disagreeable feature of the drug is that it scents the breath strongly for about twenty-four hours. A point in dispensing is that the addition of a few drops of alcohol renders paraldehyde perfectly miscible with water; any flavoring tincture can be used for this purpose.

The Rush Monument Fund.—Dr. George H. Rohé, of Baltimore, the secretary and treasurer of the American Medical Association's Rush monument committee, acknowledges the following contributions:

Jan. 6.	Dr. Timothy H. Bishop, New Haven, Conn..	$10.00
" "	" Benjamin F. Kitrell, Black Hawk, Miss.	1.00
" 20.	" C. S. Laughlin, Paris, Ill.	1.00
" "	" W. A. Buchanan, Paris, Ill.	1.00
" "	" W. H. Ten Broeck, Paris, Ill.	1.00
" "	" Z. T. Baum, Paris, Ill.	1.00
" "	" L. J. Weinstein, Terre Haute, Ind.	1.00
" "	" J. P. Worrell, Terre Haute, Ind.	1.00
" "	" W. C. Eichelberger, Terre Haute, Ind .	1.00
" "	" S. J. Young, Terre Haute, Ind.	1.00
" "	" T. A. Mason, Terre Haute, Ind.	1.00
" "	" B. F. Swafford, Terre Haute, Ind.	1.00
" "	" F. W. Shaley, Terre Haute, Ind.	1.00
" "	" Walker Schell, Terre Haute, Ind.	50
" "	" J. D. Mandeville, Philo, Ill.	1.00
" "	" J. L. Firebaugh, Robinson, Ill.	1.00
" "	" T. N. Rafferty, Robinson, Ill.	1.00
" "	" C. Barlow, Robinson, Ill.	50
" "	" O. Mitchell, Marshall, Ill.	1.00
" "	" W. H. Haslet, Dalton, Ill.	1.00
" "	" Mark Rowe, Redman, Ill.	1.00
" "	" J. A. Baughman, Neoga, Ill.	1.00
" "	" Milton D. Norris, Catonsville, Md.	1.00
Feb. 11.	" E. D. McDaniel, Mobile, Ala.	5.00
" "	" C. H. Franklin, Union Springs, Ala.	5.00
" "	" Davis and Davis, Birmingham, Ala.	5.00
" "	" R. M. Cunningham, Pratt City, Ala.	5.00
" "	" E. H. Sholl, Birmingham, Ala.	5.00
" "	" W. H. Johnson, Birmingham, Ala.	5.00
" "	" C. A. Thigpen, Montgomery, Ala.	5.00
" "	" J. B. Gaston, Montgomery, Ala.	5.00
" "	" J. C. Le Grand, Anniston, Ala.	5.00
" "	" J. T. Searcy, Tuscaloosa, Ala.	2.00
" "	" J. C. Hendrick, Greenville, Ala.	2.00
" "	" S. C. Henderson, Brewton, Ala.	2.00
" "	" J. A. Wilkinson, Flomaton, Ala.	2.00
" "	" Shirley Bragg, Lowndesborough, Ala.	2.00
" "	" John A. Pritchett, Haynesville, Ala.	2.00
" "	" W. D. Gaines, Milltown, Ala.	2.00
" "	" J. J. Harlan, Hackneyville, Ala.	2.00
" "	" J. A. Goggans, Alexander City, Ala.	2.00
" "	" L. W. Johnstown, Tuskegee, Ala.	2.00
" "	" S. A. Holt, Eufaula, Ala.	2.00
" "	" W. E. Cason, Ashville, Ala.	2.00
" "	" R. F. Harper, Ozark, Ala.	2.00
" "	" W. B. Asberry, Anniston, Ala.	2.00
" "	" W. B. Cameron, Sumterville, Ala.	2.00
" "	" R. L. Sutton, Orrville, Ala.	2.00
" "	" S. C. Carson, Bessemer, Ala	2.00
" "	" G. T. McWhorter, Riverton, Ala.	2.00
" "	" M. W. Murray, New Decatur, Ala.	2.00
" "	" Jerome Cochran, Montgomery, Ala.	17.00
Feb. 15.	Iowa and Illinois Central District Medical Society.	25.00
Mar. 14.	Interest on mortgage note	25.00
	Before reported.	3,548.39
	Total.	$3,729.39

Lectures and Addresses.

VALEDICTORY ADDRESS TO THE GRADUATES IN COMPARATIVE MEDICINE AND VETERINARY SCIENCE OF McGILL UNIVERSITY, MONTREAL.

By WESLEY MILLS, M. A., M. D., D. V. S., ETC.,
MONTREAL.
PROFESSOR OF PHYSIOLOGY IN THE FACULTY OF HUMAN MEDICINE AND IN THE FACULTY OF COMPARATIVE MEDICINE OF McGILL UNIVERSITY.

GENTLEMEN: To-day we, your teachers, congratulate you on having overcome, by your industry and perseverance, the obstacles that have been in your path during the past three years. Having now reached the goal, you may honestly rejoice, and if your bosoms swell with pride, it is, we know, a pride tempered by the conviction that the mental status to which you have attained is very far removed from that which you hope to reach by the same wise use of your powers in the years that are to come. We and you alike realize that this day marks an era. Henceforth you walk your way without any man's special guidance. You take your fates in your own hands. You are very different men to-day from what you were three years ago. Were it not so, you would have failed to pass those examinations conducted both by your teachers and that independent board composed of practising members of your own profession, by virtue of which this university has conferred upon you the degree of doctor of veterinary science.

As the choice of a calling or profession determines to a large extent the manner in which the individual shall use his powers during his whole life, it is for himself and his fellows, necessarily, one of the most important decisions of a lifetime. In fact, it is only excelled in gravity by the choice of one's principles and one's partner for life. The man of no fixed principles of action is like a ship without a compass or rudder; the man of bad principles is a constant menace to society. The individual who selects either profession or principles at haphazard, sins against himself and his fellows; but he who chooses lightly her who is to determine the future, does so still more, for the laws of heredity are as certain and inviolable as any others, and heredity is of infinitely more importance in the large proportion of cases than environment. I hope, therefore, that this latter choice has been delayed till it can be made with an insight into the laws of Nature you once did not possess.

Probably no body of young men chooses a profession more from a love of it than students of comparative medicine. It is rare to find a candidate who is not an ardent admirer, to say the least, of some variety of our domestic animals, while many have for our dumb fellow-creatures the keenest sympathy and no mean appreciation of their natural qualities. In this they can claim affinity with some of the noblest of mankind of both sexes. It is a matter of history that not a few of the best, most highly endowed, and most distinguished of our race have recognized their fellowship with our speechless servants, pets, and friends; while willful neglect and cruelty are certain marks of a mean and ignoble nature. The man who kicks his horse or his dog is only too prone to abuse his wife and children, or grind down his fellow-men.

But, now that you leave college halls for the larger world, the view you take of your profession, both as to what it is and what it may become, is of supreme importance.

It so happens that just at the present time there are apparently some special grounds for discouragement. The clatter of horses' feet in the streets of cities has been in no small degree replaced by the electric motor and the noiseless speeding wheel of the bicyclist; and the great horse ranches and breeding farms have, in many cases, ceased to exist. But the pork barrel is still being filled, and butter, cheese, and milk have not been banished from our tables. People as yet prize woolen garments above all others. Boots and shoes continue to be made from the prepared skins of our domestic animals, and all require them. The broad pastures of this great continent are dotted over with fleecy sheep, and the cattle on a thousand hills have a utilitarian as well as a poetical significance. The hungry millions of Europe await our supplies of meat, and I only wish that we could put some into every expectant mouth.

It is scarcely likely that that animal which has played so conspicuous a part in domestic service, in the chase, in war, in romance, and on the course will cease to grace the earth and to delight mankind. I am inclined to believe, however, that the present subordination of the horse, with the consequent necessary decrease in equine medical practice, is a blessing in disguise. It has always seemed to me unfortunate, both for man and beast, that the veterinarian's education and practice were so largely confined to the horse. In reality, the interests of the mass of mankind are more closely bound up with the well being of other animals. We are all dependent on them for our necessaries, even our very food; and it is becoming more and more apparent with the progress of medicine that the health of mankind is in large measure determined by that of our domestic animals. They are liable to many of the same diseases as ourselves; and that malady—plague, it might almost be called—which still carries off at least one tenth of the whole human family, is frightfully prevalent in that very class of animals on which we are most dependent—viz., the bovine species. In the domestic cow, almost a part of the family, there may lurk hidden beyond the power of detection, except by recently discovered means, the germs of that disease, tuberculosis, of all the most widespread and destructive to the human family, and from this animal, the family or dairy cow, there is now no longer any doubt that it can be, and is, conveyed to man.

The public is at last, thanks to the efforts of medical men and the diffusion of knowledge by the printing press, aroused to the gravity of the danger that menaces every family. Loving mothers and anxious fathers bending over the cradles of their sick children, with a suspicion as to the cause of the evil, and a determination as to the remedy, demand that those on whom the public responsibility rests

shall see to it that milk is not only free from added water, but from deadly germs; and they are generous enough to insist that the benefits shall not be confined to their own offspring, but extend to the children of the ignorant poor, who, though unaware of the cause of the dreadful scourge, none the less suffer the pangs of bereavement.

An intelligent public will see that inspection must extend to dairies and to the cattle themselves, as well as to milk and to butcher's meat. There is but one class of men—veterinary surgeons—properly qualified to carry out such inspection. There should be no half measures, no temporizing, no dallying with these most imperative reforms, in comparison with which a large proportion of the subjects that engage the attention of the representatives of the people are of trifling importance. And this is but one illustration, among many, of the relations the diseases of mankind and of the lower animals sustain to one another.

The whole science of medicine and surgery is undergoing radical changes—one might almost say, being revolutionized. The results of the noble devotion to the pursuit of knowledge, for its own sake and because of its bearing, mostly not obvious at the time, on the welfare of mankind, by the eminently gifted of different lands, well represented by the late illustrious Pasteur, are in these days being turned to practical account to ward off disease and death. Plagues, such as once devastated Europe, are no longer possible anywhere among civilized communities, and we have now good reason to hope that, one after another, the known infectious diseases will be prevented or overcome, both among men and beasts. And how is this being brought about? Chiefly by experiments on the lower animals. And yet we hear, in some quarters, the senseless cry of antivivisection. Experiments on the lower animals, involving as they must, in some instances, vivisection, would be well worth while, even if only his inferiors and not man at all were concerned. Every advance in preventive and restorative medicine benefits, or should benefit, both man and beast. It follows from all this that the scope of medicine has vastly widened; that its progress has of late been extremely rapid; that its powers for good are greatly enlarged; that the outlook is most hopeful; and that in all this we have reason to believe that man and beast will alike be participators, if enlightened views as to the nature, rights, and relations of the lower animals prevail.

It must therefore follow that the profession of medicine is greater in its importance to-day than ever before. The temporary subordination of the horse may prove a blessing in disguise if the students of comparative medicine are led to devote their energies to a more thorough investigation of the nature of our other domestic animals, both in health and in disease. All the great advances in medicine, those most affecting the financial and the domestic interests of mankind, those appealing both to the pocket and to the heart, have been effected through a study of the lower animals.

It is no longer possible to recognize two entirely distinct branches of the science of medicine. Medicine is, as applied to man, no longer a system of blind empiricism, or, as applied to the lower animals, a combination o that with farriery. The barber-surgeon and the farrie are but landmarks in the history of the evolution of medi cine. Gentlemen, there is but one science of medicine just as there is but one animal kingdom, governed by th same natural laws applicable alike to man and his fellow creatures, lower, in some respects, in the scale, but sharing with him the liability to disease and death. If this b so, the only true, best method of investigating disease, a indeed everything else, is the comparative method.

Comparative medicine is the medicine of the future, and the sooner that is realized the better for man as well a beast. Indeed, we now grasp that future—the present touches its skirts. Specialism, or division of labor, will b necessary, because the powers of individuals are limited. Some will elect to treat the lower animals and some mankind, with even further subdivision; but there is only one science and art of medicine; and all the various bodies of workers in this vast field should form but different battalions of one great army fighting for the prolongation of vigorous life and the mitigation of pain in every quarter to which the power of man can reach; and Heaven forbid that any erroneous notions or false pride, any mere snobbery, should stand in the way of the great objects to be attained.

I recall the fact that it was on this very day of the month, seven years ago, that Dr. R. P. Howard, the late distinguished and revered dean of the Faculty of Human Medicine, passed from the scenes of his busy life. It may not be generally known that it was one of the long-cherished hopes of his life to see established in this university a chair of comparative pathology. Nothing, to my mind, could better have demonstrated the remarkable insight of the man. He, like other great men, dreamed dreams and saw visions. When shall we behold these realized in the establishment of one great, broad school of medicine in this university, which shall exist for the purpose of investigating all forms of disease to which living things are liable—their causes, their prevention, their cure?

Gentlemen, what a great profession is yours! What grand possibilities, what a glorious outlook! How the prospect fills the mind and satisfies the idealistic longings of the enlightened and aspiring young man! I congratulate you on the choice of such a profession. I do not say that the medical is the grandest of all professions. To my mind there is no best profession, but that is best for which the man is the most perfectly suited, and there is just so much nobility in each man's career as he puts into it. But what more can you wish than to behold in your profession the possibilities of unlimited good for the whole sentient creation? Such a profession calls, however, for men of no mere smattering of knowledge, no ordinary aims, no easily satisfied ideals. Of such people there are more than enough in all the professions already. It is unnecessary to remind you that your education is but fairly begun. Take the earliest opportunity of quitting the routine of practice, and, betaking yourselves to some institution where the best men and the most perfect equipment are to be found, again

become earnest investigators under more favorable conditions than an ordinary practice affords.

I would that I could truthfully say that we were now prepared to offer you, in a post-graduate course here at McGill, the best to be obtained in America or in the world. I doubly wish that this were so when I call to mind the fact that the dean of this Faculty of Comparative Medicine has given the best thirty years of his life to the struggle to maintain in Canada and in Montreal a high standard of veterinary education, and that, too, at a time when other schools were content with very, very much less than the Montreal Veterinary College (as it was then known) required. The present lack of suitable buildings and equipment, discouraging to all of us, must be doubly so to him. May some generous friend, grasping the conception of the importance of comparative medicine, seize the opportune moment to make for himself and this faculty a name for large and permanent usefulness.

But, gentlemen, to you individually let me say that men are more than means. The mind can rise above environment, and the greatest of our race have been those that did so. The book of Nature is open to you, as to others, and it is not in the power of the rich to shut it, though they can do much to make the opening easier. You may not be able at first to afford many books, or much time for elaborate investigation, but you will have daily opportunities for observation, and you can masticate well the mental food that comes to hand. Good digestion, assimilation, and growth will follow. Consort with the best in the medical profession, no matter in what direction their powers are applied. Read the soundest literature, as far as it is accessible to you, whether of the human or veterinary branch of medicine, but above all, observe, try, test, investigate for yourselves. In that way alone will you attain to the highest, healthiest mental life. Only thus can you add to the sum of knowledge. Oh, how vast is the field, how untilled as yet, and how few the laborers that are prepared to do the highest kind of work!

But it is not alone in connection with the higher work of the profession that opportunities of usefulness are to be found. Even the most ordinary practice offers to the veterinarian scope for bettering the condition of man and beast, and in ways somewhat different from those to which reference has already been made. To the man of means the loss of an animal may signify little more than a slight reduction in the amount of his wealth. But to the poor man, dependent on his animal for his very livelihood, its sickness must mean grave anxiety, and its death possibly serious embarrassment, so that it may be in your power not only to relieve the animal, but to remove a load of anxiety from the owner's mind and perchance to avert impending calamity.

Demand and compel adequate remuneration for your services from those who are able to pay, but refuse not the helping hand to the poor because there is no prospect of pecuniary reward. Pull the ox and the ass out of the pit, though it belong to the poor, or even to no man so far as you may know, for by so doing you will help the helpless and minister to your own better nature.

Gentlemen, it will be your privilege to diffuse a truer knowledge of the laws of life, of the conditions that make for health and disease, to suggest methods for the improvement of the breeding and rearing of a better class of animals, and to aid in the prevention of thoughtless cruelty. Allow me to express the hope that you and the other graduates in comparative medicine, who have had special training in studying the psychic nature of animals, will endeavor to interest those you may meet in this aspect of animal existence, and to help the public to realize that those animals by which we are daily surrounded are in reality our fellows, with not only a like susceptibility to suffering, but with not wholly dissimilar feelings and intelligence. Even the dullest of them have more within the round of their lives than we usually realize.

But what shall we say of those more intelligent creatures, the horse and the dog? From time immemorial the dog has been, in one sense or another, the companion of man. He has, by countless thousands, been recognized as the guardian of property, the defender of women and children, the amusing pet, and the ever willing servant. He enters into our every mood and readily adapts himself to our caprices. Grateful for the smallest favors, even a kindly word, he nevertheless accepts kicks and blows, however undeserved, and still loves him who has forfeited all claim to affection. He willingly shares in his master's poverty or degradation, and when forsaken by all men he will not leave him even though he perish in the gutter, and he will guard his outcast form till he draws his own last breath. What a rare combination of qualities in the dog! How much poorer the world would be without him! But in all our domestic animals there is much to admire, if we but properly understand them; and it does seem to be no unworthy use of time and energy to make their real nature better known.

It may be that, by such services as those to which I have been alluding, you will not put money in your purse, but you will be laying up for yourselves treasure in the heaven of your own breasts. But, gentlemen, the time would fail me to do justice to the greatness of your profession. We, your teachers, all wish you well, and what better can we desire for you than that you may be good men and true, seeing in your chosen calling and in life what is and what may be, and that, inspired by worthy ideals, you may live noble lives? Farewell.

The Prevention of Criminals.—In a recent lecture before a teachers' association of Turin, Professor Lombroso dwelt upon the practical advantages of a knowledge of the science of criminal anthropology to those who have to do with the training of the young. The inclinations of the child, he said, are almost the same as those of the adult criminal, but usually disappear as age advances. In some instances, however, these characteristics continue and become more and more marked. In these cases there are associated physical peculiarities, and it is in the detection and pointing out of these possible criminals of the future that the speaker believed the teacher can do so much truly useful work.—*Medical Record.*

Original Communications.

PRIMARY SARCOMA OF THE ORBIT,

WITH EXTENSIVE INFILTRATION INTO THE ADJACENT SINUSES.

By H. McI. MORTON, M. S., M. D.,

OPHTHALMOLOGIST TO THE ST. BARNABAS HOSPITAL, MINNEAPOLIS.

Gustav B., aged eighteen years, German, was admitted to the Asbury Methodist Hospital on April 5, 1893. The writer saw him on the next day and obtained the following history:

In January of the same year the patient had noticed swelling, accompanied by redness, over and above the left cheek and below the eyelid. In March the right eye and malar region were similarly affected. There was no history of traumatism, and his family history cast no light upon the case. He stated that very soon after the involvement of the right eye it was the more swollen of the two. He had received no medical attention, since the progress had been very slow, and until the last few days the eyes had protruded but slightly. Lately, however, they had bulged out rapidly, and the loss of vision in the left eye had been so noticeable as to cause him alarm. The condition at the time will be seen in Fig. 1 and Fig. 2.

Examination (A).—Left eye: V. = counting fingers at four feet. I found this eye proptosed to such an extent that a vertical tangent to the posterior ocular segment would pass anterior to the orbital margin. The antero-posterior axis of the globe deviated slightly outward. The motility of the eye was, of course, greatly restricted, especially in an outward direction. Cornea clear and regular. Iris of proper pattern and color. Pupil small, round, and responsive to both direct and consensual stimuli. Palpebral conjunctiva unaffected, and no marked bulbar injection or chemosis. Sclera free from injection or cicatrices. Lids red and swollen, but not indurated, in fact, rather flabby, and covered central pupillary area T. = + 1. In the region of the lacrymal sac there was much induration, redness, and tenderness, with stenosis of lacrymo-nasal duct. These inflammatory signs were confined to the immediate region of the globe and its appendages. Not much pain, but a sense of fullness, discomfort, and distress.

Fig. 1.

Fig. 2.

(B) Right eye: V. = $\frac{6}{6}$. I defer the description of this eye to the last, since the conditions were similar, but not as exaggerated, as found in the left. Proptosis marked. Antero-posterior axis directed forward, and motility not quite as much restricted as in the left. The cornea, iris, and sclera normal, and bulbar and palpebral conjunctiva likewise normal. Pupillary reaction normal. Slight obliteration of the oculo-orbital sulcus. T. +. There was no pulsation or bruit (by stethoscope) discovered over either globe.

(C) *Ophthalmoscopic.*—The ophthalmoscope revealed in the left eye a tortuous and engorged condition of the veins and violent pulsation. The veins were about twice the normal calibre. The arteries were greatly diminished—almost to threads. This contrast was very striking. The disc was inflamed and its border hazy. The ocular media were clear, but the retina was œdematous.

In the right eye the veins were dilated and pulsating, the arteries contracted. The edge of disc indistinct, yet retina transparent.

General Examination.—His general appearance was that of a rather frail-looking lad and ill nourished. The temperature on admittance was 103·5°; pulse small and rapid. No cardiac murmurs or increased cardiac area of dullness. Rather flat chest, but respiratory sounds not indicative of pulmonary trouble. Urinary examination negative. The area of hepatic dullness normal. No specific history obtainable as regards syphilitic or tuberculous taint. The left nasal chamber filled with a mass of purulent *débris* which protruded from the anterior nares. There was no supramastoidal bogginess or redness.

From the day of his admittance the progress of the tumor was most malignant, as a few references to my notes will demonstrate. From the symptoms as they were observable upon his admission I thought I had a rare case of bilateral retro-orbital phlegmon. It took but a few days to show the fallacy of such a diagnosis. As will be seen, the tumor mass invaded the antrum, the nares, the ethmoidal and sphenoidal sinuses, the naso-pharynx, and the anterior cerebral fossæ. So long as any portion of these first-named cavities remained unfilled, there was not great trouble; when, however, these convenient dumping grounds were exhausted, and the mass pushed backward toward the apex of the orbit into the middle cerebral fossa and upward into the anterior fossæ, the symptoms assumed a more alarming phase and the external signs a more malignant type.

On April 9th, only four days after the patient's admission, the left eye had lost all light perception; the pupil was dilated and immobile, the tension greatly increased, and the lid pressure upon the bulbus had made deep furrows into a mass of gelatinoid material which completely filled the interpalpebral fissure, all this indicating that the tumor mass was rapidly filling and packing the retro-orbit and pressing on the neurovascular apparatus. I was fortunately (as it turned out) unaware of the extensive involvement of the adjacent sinuses at that time or I should have probably not taken the radical action which prolonged his life some months—this, however, a doubtful consummation under the circumstances.

On April 9th I had the patient etherized and made a small incision just above the inner canthus, in order to obtain, if possible, some information, by the probe, relative to the extent of involvement of the accessory cavities. The probe, introduced through the incision, passed readily into the naso-pharynx, and could be seen through the mouth, also into the ethmoid, the antrum, and the nasal cavities. I found lumps of pus and some bloody discharge. I enlarged the incision and introduced a drainage-tube. The odor soon became so offensive that the patient had to be isolated, and became a great nuisance to attend.

On April 11th I find I made the following note of case: "Light perception gone in left eye, corneal epithelium abraded,

pupil less dilated, immobile, extreme chemosis, and the interpalpebral fissure filled with a mass of solid, gelatinlike material. A large tumor mass projects from left antrum and nares; nodular, friable, and bleeds easily." I was able to pass my finger through the orbital roof into the anterior cerebral fossa. Fig. 3 and Fig. 4 will give an idea of the case at this time. The extreme tension upon the skin may be noticed as

Fig. 3.

Fig. 4.

manifested by a large tear at the side of the nose and the manner in which the lips are drawn up, this being the position of the mouth, and the only position the patient could assume.

So great was the patient's misery that, after etherizing him, I made an opening into the antrum, through the anterior wall, with the idea of curetting out as much of the mass as possible. A large amount of tumor tissue was removed in this way, and with it the entire Gasserian ganglion, greatly enlarged to four times the normal size; the globe was enucleated, and as much of the tumor as could be curetted from the antrum, nares, and pharynx, thus making a large cavity, since the bony septa had been absorbed by the sarcoma. Paquelin's cautery was necessary to stop the hæmorrhage, which was very profuse. This operation was performed before the third-year class of the Medical Department of the University of Minnesota. The cavities were packed with boric powder and a bandage applied. The relief of the patient was remarkable, and he was able to be up and about, with the use of the right eye, for some two months. He then returned to the hospital some time in July. The progress was very rapid from this time on until his death in a few weeks.

Post-mortem Examination.—(*a*) *Macroscopic:* I shall give this from notes taken at the time by my friend Dr. G. G. Eitel, to whom I am indebted for much assistance at some of the operations on this case, as well as to my friend Dr. J. Clark Stewart, who assisted me in the post-mortem examination. The notes read thus:

Facial sinuses all infiltrated, horizontal plates of both superior maxillary eaten away. Tongue involved and entire buccal cavity on left side filled. Anterior plate of antrum gone (this partly by operation). Bony roof of orbit eaten away, and tumor pressing on frontal lobes of brain three quarters of an inch. Tumor contains some cysts throughout. Slough in left cheek from pressure. Post-palatine bone absorbed, and tumor mass pressing through posterior nasal space into the brain (anterior lobes). Decided exophthalmia of right eye. Liver and all other organs normal.

(*b*) *Microscopic:* My friend Dr. J. Clark Stewart, professor of surgical pathology in the University of Minnesota, gives me the following report from a piece of the tumor handed him:

Tumor handed me by Dr. Morton. This tumor consists of a central mass with a number of tonguelike processes which in the main show smooth surfaces pointing to non-adherence to surrounding structures. One long process is blackened and superficially necrosed. This I was told projected into the buccal cavity and was thus subjected to the action of the oral fluids. Sections taken from the various fragments show substantially the same picture, although the quantitative relation between the different tissues differs in the older and younger portions of the tumor.

The sections show mainly an atypical cartilage, very rich in cells irregularly arranged. In a few fields the capsules are clearly formed and regularly arranged, but in most the cells are grouped closely together and mingled with round mononucleated cells about the size of a white blood-cell.

The vessels are very numerous, large, and thin walled, and in some regions the arrangement is cavernous. In the older portions of the tumor there are areas of new-formed bone which is irregular in structure. There are also areas of mucous tissue in most sections, but these do not seem to be an important element, and the consistence of the fresh tumor would indicate very little of this tissue.

The diagnosis is therefore chondrosarcoma, or perhaps myxochondroma, tending to become sarcomatous.

504–507 Dayton Building.

CHRONIC DISEASES OF THE TONSILS.*

By NORTON L. WILSON, M. D.,

ELIZABETH, N. J.,
SURGEON TO THE NEWARK CHARITABLE EYE, EAR, AND THROAT INFIRMARY; OPHTHALMOLOGIST, OTOLOGIST, AND LARYNGOLOGIST TO THE ELIZABETH GENERAL HOSPITAL, ETC.

I invite your attention to the subject of chronic diseases of the tonsils. Having performed the operation of amygdalotomy over two hundred times, I have thought possibly my experience might be of some value, especially to the younger members of this society.

Let us look for a moment at the normal tonsil—that is to say, at the lymphoid tissue which forms the ring about the base of the tongue, between the anterior and posterior palatine folds, and in the vault of the pharynx. This chain of lymphoid tissue is sometimes spoken of as the lymphoid ring. We will especially direct our attention to the lymphoid tissue situated in the triangular space between the anterior and posterior palatine folds, which is described by various authors as follows: Professor Huxley says: "Two glands, one on each side of the palate between its pillars." Foster's *Encyclopædic Medical Dictionary* gives the following definition: "A prominent body situated (one on each side) between the pillars of the fauces, about half an inch long and a third of an inch wide and thick." Beverley Robinson describes the tonsils, in the second volume of the *Cyclopædia of the Diseases of Children*, edited by Keating, as being variable in size. "They are oval or almond-shaped bodies, flattened transversely, situated one on either side, and projecting slightly into the isthmus of the fauces. Each tonsil is about twelve millimetres long and eight millimetres wide, and the thickness

* Read before the Clinical Society of the Elizabeth General Hospital, December 10, 1895.

equals the width." I will only quote one more author to show that there is in the minds of all these men a gland known as a tonsil. Sajous, in his work on *Diseases of the Nose and Throat*, says: "The tonsils are two almond-shaped bodies lying between the anterior and posterior pillars, one on each side. Each tonsil is about nine lines long and six lines wide."

I have purposely gone into the anatomy of the tonsil to show you that most men at least consider the tonsil as an organ of the body. My former teacher, Dr. F. H. Bosworth, has maintained for years that there is no such organ as the tonsil, and I am inclined to think he is correct.

There are in normal throats several small, isolated lymphoid glands, with a few mucous glands, just as there are at the base of the tongue, and it is only by repeated inflammatory processes that they coalesce, become one, so to speak, and are bound together with connective tissue. The function of these mucous glands is to secrete mucus and help coat the bolus of food as it passes into the œsophagus, while the function of the lymphoid gland is the same as that of any other lymphoid gland. We are therefore to abandon the idea that the tonsil, as described by so many authors, is one of the organs of the body, but rather accept the teaching that the tonsil is simply a mass of diseased tissue in the fauces.

According to Hodenpyl, reported in the *American Journal of the Medical Sciences*, the tonsil has an important bearing upon the absorption of bacteria and their ptomaines, and in the production of certain acute infectious diseases. This, however, seems to be incapable of clinical demonstration.

The question of hypertrophy is one which will first occupy our attention, inasmuch as that is the most frequent abnormal chronic condition. Some observers consider a tonsil hypertrophied only when it projects beyond the plane of the palatine folds; this view, however, is not justified by pathology or clinical history.

In a perfectly normal throat the tonsils are visible merely as small lobules of lymphoid tissue, situated between the folds, on the surface of which are barely perceptible the orifices of numerous crypts. We therefore include in the term "hypertrophied tonsils" all degrees of enlargement up to that which brings these bodies in actual contact. Cases are on record in which adhesion between the opposite tonsils had taken place; while, on the other hand, a tonsil may be positively enlarged and still remain concealed behind the palato-glossal fold. The enlargement may be due to a low grade of inflammation, or it may be a genuine hypertrophy, such as all lymphatic glands are subject to. The amount of disturbance excited by enlarged tonsils depends upon the dimension of the fauces and upon the temperament of the individual. In a phlegmatic subject, or in a capacious pharynx, tonsils of large size may cause but little discomfort; while, on the other hand, I have not infrequently met with tonsils barely projecting beyond the pillars of the fauces which produced excessive annoyance. In the several thousand throats examined by me during the past twelve years I have not observed more than half a dozen normal ones. Of course, most of these persons consulted me for some throat affection, and it would not be expected that I should find a normal throat. I have, however, examined many throats which gave no symptom of disease and found them to be abnormal. From a pathological standpoint, hypertrophied tonsils may be divided into (1) the hard or fibrous, and (2) the soft or adenoid. The hard, cirrhotic tonsil is oftenest found in adult life, and is usually due to repeated attacks of acute or subacute amygdalitis. This is the form which bleeds so profusely, and, as our late associate, Dr. Miller, used to say, when I strike one of that kind I take off my hat and am very respectful. The second form is more frequent and occurs earlier in life; it is usually associated with adenoids in the nasopharynx, and frequently with lymphoid hypertrophy at the base of the tongue. They undergo atrophy somewhat earlier in life and more completely than the hard variety. It is not unusual to find this latter variety of tonsil merging into the first, in consequence of repeated attacks of inflammation, which result in the development of new connective tissue. Before removing a tonsil there are several things to be thought of:

1. Which variety of hypertrophy is it?
2. Is it a factor in the production of sore throat?
3. Are the crypts or lacunæ only affected?
4. The age of the patient.

If we are dealing with the hard variety of tonsil, I much prefer to use the snare, as the bleeding is much less, owing to the vessels being compressed.

If the hypertrophy is not a factor in the production of sore throat, and is apparently doing no harm, I leave it undisturbed. If the crypts alone seem to be the seat of disease, I cauterize them rather than amputate the tonsil.

If the patient is in the neighborhood of thirty and they are not frequently inflamed, I prefer to paint them, as they will, in all probability, atrophy within a few years. In regard to the operation of amygdalotomy, I would say that I have had but three cases of severe hæmorrhage. In one of these it was not controlled for several hours and the patient lost much blood. In the two others it was controlled in an hour, but the patients were weakened from the loss of blood. In the first case I was only able to control it by pressure, in the second one by the use of the galvanocautery, and in the third one by the use of a gargle made of tannic and gallic acids, three parts of the former to one of the latter. Just here permit me to quote the remarks of Dr. Daly, made at the last meeting of the American Laryngological Association. He said he was of the opinion that there had been more bad surgery done upon the tonsils than upon any other part of the human body. He had endeavored to study the function of the tonsils, and he had come to the conclusion that they formed no part of the normal throat. He wished to be placed on record as saying that the man who pinned his faith to the statement that there was no danger of hæmorrhage in amygdalotomy would sooner or later meet his Waterloo. Such an individual deserved to meet this fate for relying upon worthless statistics.

The pain from the use of the cold snare is much greater than after using the amygdalotome, and when I find it

better to remove the tonsil by snare I prefer the hot wire. If the tonsil is adherent to the pillars of the fauces it must first be detached, and this point, I think, is usually neglected by the general profession. Mothers frequently ask if these tonsils will return after they have been cut out. My reply invariably is No, not if they are properly cut out. The trouble is that many operators neglect to separate these adhesions.

In the cases where the crypts alone seem to be the seat of the disease the galvano-cautery will reduce the hypertrophy. It is better not to puncture the crypts directly with the galvano-cautery, but to make the puncture diagonal to these crypts. The object of this treatment is to destroy the lymph spaces by substituting a local acute inflammation for an old and chronic one.

Some six or seven years ago I read a paper before the County Medical Society giving some statistics in the use of the galvano-cautery, which showed that the tonsils could be reduced in size; but it took a much longer time, and on the whole was not so satisfactory as amputation. After removal of the tonsils, do patients ever suffer from sore throat? Yes; the remaining stump not infrequently takes on a slight grade of lacunar disease, but it is always of a milder type, is less frequent, and within two years disappears.

I have satisfied myself that medicine given internally does not reduce the size of the tonsil. I recall a case where a prominent homœopath persuaded a patient not to have his tonsils amputated, saying he could reduce them by medicine. I made the agreement to pay the doctor's bill if he could reduce them, and I wanted the patient to give him every opportunity. He was under his care a year, and, not seeing any improvement, I amputated the tonsils. I have administered iodides, hydriodic acid, and a host of other drugs without reducing their size.

The majority of hypertrophied tonsils should be removed, but common sense must be used in such a determination just as in other surgical matters. It is scarcely necessary to say anything about the operation. Personally, I prefer the Mathieu amygdalotome; but this is a matter of individual taste and not essential to the perfect operation. I have used the bistoury, the scissors, the Mackenzie guillotine, and the hot and cold snare.

It has been my good fortune to see three cases of mycosis of the tonsil. This is a rare affection, but is no doubt often mistaken for follicular amygdalitis or diphtheria. The disease is only important from a diagnostic standpoint. It usually occurs in those predisposed to catarrhal affections. It is seldom attended by fever; most patients are in good health and seldom complain of anything more than a slight itching or scratching sensation in the throat. The irritation may be sufficient to excite cough or even vomiting, but seldom amounts to pain. Two forms of this disease are recognized, although I have seen but one—the diffuse and the circumscribed. In the former there is a milklike, shiny deposit, thick enough to cover and conceal a considerable area. The second form, with which I am familiar, resembles follicular amygdalitis, but there is no congestion. The patches are firmly adherent and quickly recur if removed; a little blood may follow their forcible detachment, but still it is evident that the membrane or deposit is not incorporated with the tissues as is the case in diphtheria. The patches are single and never run together. The microscope shows the presence of the *Leptothrix buccalis*. The treatment for this disease must be radical, and even then it may last for months. Curetting and the frequent application of salicylate of sodium in alcohol I have found to be efficacious.

Calculi, foreign bodies, and parasites are so rare that I will not take up your time to speak of them. I must not close, however, without saying something about tumors and syphilis. I have never seen a chancre on the tonsil, but I have not infrequently seen a mucous patch, and as it is always associated with other symptoms it is easily diagnosticated. Syphilitic ulcers and carcinoma are not always easily distinguished. In my opinion the local treatment for mucous patches or ulcerations is with nitrate of silver or chromic acid; my own preference is for the latter. Of course, internal medication must also be used, but I believe in pushing the iodides to tolerance—sixty, ninety, or a hundred grains daily if necessary.

Tuberculosis and lupus of the tonsil have never come under my observation. Benign tumors of the tonsil are generally papillomatous in structure. They may give rise to little or no trouble, or they may produce considerable irritation. The specimen I show you to-night produced some cough. They are always painless, usually pedunculated, and may vary in size from that of a pea to a large mass. The many forms of benign and malignant tumors I have merely seen in the throat hospitals and have had no experience in their management, and with these few wandering remarks on chronic diseases of the tonsil I conclude my paper.

EXCISION OF THE TONGUE FOR CANCEROUS DISEASE.

By J. O'CONOR, M. A., M. D., B. Ch., Trinity College, Dublin, senior medical officer, British Hospital, Buenos Aires.

As the following method combines rapidity of execution with a very small loss of blood, it may be interesting to publish it:

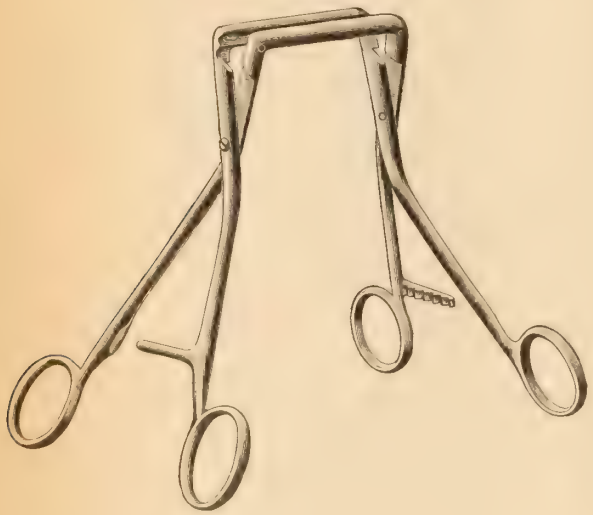
1. A Mason's gag having been introduced, the tongue is seized, an inch from the tip, with a forceps (see Arnold's Catalogue, 1895, Fig. 1855). By using these instead of the orthodox silk threads, there is a great advantage, in that the operator has got a firm hold of the organ and can move it "in one piece" at will, which is most useful throughout the operation. By this means the tongue is drawn forward and upward; thus the floor of the mouth is thoroughly exposed and the frenum made tense.

2. With blunt-pointed scissors, angular on flat, the frenum is divided downward and backward, then the mucous membrane on the floor of the mouth, and if the cancer is situated far back, some fibres of the genio-hyo-glossi must be severed, also the attachments to the anterior pillars of the fauces. The tongue can now be drawn well outside the mouth; in fact, as Mr. Whitehead states, "the operation is

practically converted into an extra-oral excision." Also, I most fully indorse this gentleman's opinion that it is unnecessary and losing valuable time to bother about the small amount of hæmorrhage that occurs from the above-mentioned detachments.

3. A transverse incision is next made with a sharp knife, if possible an inch posterior to the cancer; this cut must extend the whole width of the tongue; with two or three bold touches of the knife an incision half an inch in depth is made; the hæmorrhage from this source does not deserve the application of a torsion forceps.*

4. The tongue is now seized by a strong double-handled forceps (see figure), with the upper blade placed in a



groove made by the transverse incision and the lower one under the tongue at the same line. The forceps is tightly locked, and with very little traction the whole field of operation is advanced and fixed, and any hæmorrhage there is ceases.

5. A lateral cut with angular scissors is next made behind the forceps on each side to the extent of a quarter the diameter of the tongue.

6. An aneurysm needle, threaded with a strong double silk ligature, is passed exactly in the median line behind and quite close to the forceps; the silk loop is grasped and divided, and the needle withdrawn; for the moment it is expedient to attach an artery forceps to each end of the silk ligatures; this prevents any subsequent confusion. Before tying, the tissues containing the lingual arteries may be yet further divided by gentle sawing movements with each ligature; when tied, the tongue is cut away anteriorly to the forceps, the latter removed, and any superfluous tissue anterior to the ligatures snipped away.

This almost bloodless operation takes about ten minutes to perform; if the patient is deeply chloroformed before beginning, it is quite unnecessary to continue it; the anæsthetist can lend much more called for assistance by keeping the head pushed forward and to one side.

* The depth of the incision must vary according to the portion of the tongue incised; if too deep, the linguals would be cut.

For the removal of a cancer in the anterior half of the tongue, five minutes' deliberate work will readily suffice. In this calculation the possible supervention of "surgical delirium" is, of course, not reckoned.

This forceps renders the operation rapid, safe, and easy; in fact, reduces the immediate operative gravity of the procedure to the small risk of an operator with a "shaky mind" cutting the linguals when dividing the oral attachments.

The advantages I allege for this method are: (*a*) The portion of tongue posterior to the cancer is securely fixed and can not slip back; (*b*) forward traction is secured; thus the operative field is kept easily "in hand" and well in view; (*c*) no respiratory or hæmorrhagic difficulty takes place—in fact, "you have got him tight"; (*d*) the fixed handles of the forceps serve as self-retaining mouth retractors.

To a recent publication by Mr. Christopher Heath, A Bloodless Method of Removal of Half the Tongue, I am indebted for the main idea in this operation.

A few remarks as to the construction of the forceps may be useful. The blades are seven centimetres in length, and are of the same bulk as those in Wells's strong angular pressure forceps. At each end of one blade a pin is fitted in order that the tongue can not slip outside the grasp of the forceps. The grooves in the blades are horizontal, not oblique, as in Wells's, and are placed at an angle of one hundred and twenty degrees with the blades. The joints are placed an inch from the blades in order to give a wide range of movement.

I have asked Messrs. Arnold & Sons, West Smithfield, to make the forceps.

A THERAPEUTIC TEST OF FERRATIN.

By GEORGE T. RICHARDSON, M. D.,
CAYUGA, IND.

Case I.—On November 14th I was called on to prescribe for Miss E. H., aged fourteen years. She had been in poor health for the past four years, on account of which she had been kept at home and allowed but little outdoor exercise. During the past year her appetite had been variable, sometimes almost ravenous, at others she had complete anorexia. Bowels generally constipated, but every five or six weeks diarrhœa supervened for a day or two, then ceased spontaneously. At this date there was much swelling and hardness of abdomen, pallor of face, tongue whitish, circulation sluggish, shortness of breath, some difficulty in swallowing, and a fidgety, irritable disposition, with frequent twitchings of the facial muscles and an unsteady gait.

Diagnosis.—Chorea. Gave aloes and nux vomica to relieve the constipation, and put her on the use of ferratin, five grains three times daily.

November 21st.—Some improvement. Appetite a little more normal. Sleeps well, has a little more color in her face, but the muscular jerkings continue the same. Increased ferratin to eight grains three times daily, and saw her again on November 28th. Improvement was decided, appetite was fairly good, her strength was returning, deglutition was normal, and the convulsive jerkings of the face were scarcely perceptible.

December 5th.—Great improvement every way, and the girl seems very cheerful. Now ordered ferratin tablets, eight grains three times daily, until December 12th, then twice a day until January 1st, since which time she has taken nothing, and is to-day enjoying good health.

Case II.—A girl, aged twelve years, was brought to my office on November 19th, with pallid countenance, anæmic, and greatly emaciated. Had frequent nausea, headache, and palpitation. Appetite poor and bowels constipated. Had never been robust. Prescribed cascara sagrada for the bowels, and gave ferratin, five grains three times daily. Allowed her to eat whatever she desired.

November 26th.—Slight improvement; face more ruddy, no nausea, less headache, and no palpitation. Continued ferratin.

December 3d.—A marked improvement in every way. Appetite fairly good, strength much increased, bowels moved daily without the laxative, and the girl's disposition was more cheerful. She had now been taking ferratin fourteen days, and the prospect of speedy cure was so flattering that I continued the use of the remedy in the same doses. Saw her again on December 10th, and was surprised at her rapid improvement. Her appetite and digestion were good. Headache, dyspnœa, and palpitation were gone. Her increase in weight during the three weeks was three pounds and a half. I now ordered ferratin in three-grain doses three times a day for two weeks, and then twice a day for two weeks longer, at the end of which time she was discharged cured.

Case III.—A girl, fifteen months old, raised on artificial food, which never "agreed with her." Was very anæmic—almost lifeless; vomited whenever food was given her, with occasional diarrhœa, and abdomen enormously distended. Gave minute doses of subchloride of mercury, followed by sulphocarbolate of zinc. On the second day added ferratin, one grain three times a day. At the end of a week there was so much improvement in the child that the parents and callers were free to say they "guessed they had hit upon the right thing at last." The ferratin was continued in increasing doses until, during the third and fourth weeks, she must have taken ten grains daily, after which the doses were gradually diminished to three grains daily, as at first. Six weeks have passed since ferratin was prescribed, and there has been a constant improvement from the first. The patient now retains her food, bowels in good order, appetite good, sleeps well, and her recovery is said to be "almost miraculous." She is still taking ferratin, one grain night and morning. The beauty of this preparation of iron lies in the fact that it *promotes digestion* without interfering with the normal condition of the bowels.

Case IV.—A man, aged fifty-three years; was a soldier in the late war; contracted chronic diarrhœa, for which he was discharged. Was never entirely cured of this trouble until the year 1892, when he thought himself entirely cured. For about fourteen months he enjoyed fair health, when he began to notice an abnormal enlargement of the abdomen, which soon resulted in ascites. From July 3, 1893, to August 1, 1894, the patient was "tapped" six times, and altogether about eighteen gallons of fluid withdrawn. Debility and emaciation were extreme. After the last operation, on August 1st, I put the patient on the use of Indian hemp and ferratin, fifteen grains of the latter three times a day. At the end of one month there was some collection of water in the abdomen; I gave a few large doses of jalap until about a dozen copious watery stools were produced, and increased the ferratin to twenty grains three times a day. At the end of the second month there was no dropsy, less thirst, slight improvement of appetite, and general appearance altogether favorable. I now withheld the hemp, but continued the ferratin regularly, as before. At the end of three months there was great improvement. Appetite was very good, complexion florid, slept first rate, bowels regular, and ascites *nil*. Reduced ferratin to fifteen-grain doses three times daily for two weeks, then to ten-grain doses for two weeks longer, then to five grains for two weeks, and pronounced him a well man.

In four cases of anæmia following *la grippe* (all in females) the administration of ferratin (eight grains three times daily) was soon followed by results most satisfactory. Under its use the appetite gradually increased, the pallid countenance disappeared, strength returned, and in two of these cases, where menstruation had been irregular and scanty, the periods became normal. No other medicine was used.

Case V.—M. C., aged nineteen years, teacher, had been in poor health for nearly a year. Complained of headache and frequent nausea and vomiting, palpitation and fatigue upon slight exertion, shortness of breath, deranged menses, and loss of color. For the constipation I gave aloin and arsenate of strychnine, and put her on the use of ferratin, eight grains, increased every week, so that at the end of the fourth week she took twenty grains three times daily; then decreased gradually, so that the eight-grain dose was taken at the end of the second month, then continued in four-grain doses for two weeks more. Under the use of ferratin she soon showed marked signs of improvement. Color returned, headache and nausea disappeared, appetite became fairly good, and menstruation normal.

In a number of other cases similar to the last, with great debility, complete anæmia, lassitude, headache, insomnia, and pallor, occurring in persons of different ages, I have found great benefit from ferratin, administered three times daily in doses ranging from three to fifteen or even twenty grains. Yet, in my opinion, from the result of treatment in my more recent cases, no advantage is derived from larger doses than eight grains, which may be taken three times daily, or oftener if deemed necessary.

I regard ferratin as the most valuable of the iron compounds, from the fact that it is nutritious to the tissues, and rapidly builds up those cases in which there is apparently a lack of sufficient nourishment for the blood. It restores quietude and rest to the nauseated stomach, rapidly improves the appetite, adds color to the skin and buoyancy to the spirits, and quickly brings about a state of good health. In two cases of chlorosis ferratin was the principal agent in affecting cures.

To small children I give ferratin in milk or other liquid foods, and find it a grand nourishment and one especially indicated for such children as are deprived of their mother's milk and do not thrive well on the artificial products.

The New York Hospital Library.—In an article published in the *Boston Medical and Surgical Journal* for January 30th, Dr. James R. Chadwick made the statement that the New York Hospital Library kept no pamphlets. Dr. Chadwick was misinformed on this point; the library in question has many pamphlets.

The University of Minnesota.—Dr. J. E. Schadle, of St. Paul, has been appointed instructor in clinical laryngology in the medical department of the university.

A YEAR'S EXPERIENCE IN THE USE OF ANTITOXINE IN PRIVATE PRACTICE.

By WALKER SCHELL, M. D.,
TERRE HAUTE, IND.

A little more than a year has elapsed since I began the use of the serum treatment of diphtheria. This article is based upon its use in twenty-nine cases of diphtheria and fifteen times to produce immunity in those more or less exposed to the action of the poison.

The treatment was not used in many of the milder cases of diphtheria seen by me, since those cases were treated in the ordinary way. In the first case in which I used the serum I did not much modify my usual treatment, but as I grew more confident of the power of the new remedy to bring about a favorable termination I gradually became less vigorous in the use of antiseptic sprays and washes and insisted that the child be allowed to rest. That these cases were of more than average severity will be understood when it is stated that nineteen of the twenty-nine cases were seen in consultation with other physicians. Four of the twenty-nine patients died, or a mortality of a little less than 13·8 per cent. Two of them were moribund when the injections of serum were made, and the treatment was not used with any hope of doing good, but to gratify the earnest wishes of agonized parents. This will be understood when it is stated that death took place in one case in a very few minutes after the use of the serum. In one fatal case the patient was profoundly septic, with cold extremities and almost pulseless. Death in this case occurred in eight hours after the use of the serum.

The two other fatal cases were cases of diphtheritic croup, one in an infant at the breast and the other in a child of nine years. In this last case the patient lived sixty hours after the use of the serum. She had two doses and was intubated twelve hours before death. The intubation gave marked relief, but death took place from the heart. Two patients were rescued by intubation. Six with diphtheritic croup were mainly rescued, it seemed to me, by the vigorous use of antitoxine—the merits of tracheotomy and intubation had been discussed in two instances. These two patients received, one five, and the other six, doses of the stronger antitoxine serum in rapid succession, only a few hours elapsing between doses. The dose that I give is one bottle of the Behring serum. From what I have seen, I have no doubt that the membranes rapidly vanish under the serum treatment. It has been my observation to find the throat practically free of membrane in moderately severe cases in two or three days, and in the more malignant in four or five days.

The membranes appear to melt away under the use of the serum, and only rarely is there any increase or renewal after it has been used. In the terrible cases where the diphtheritic process fastens upon the larynx and trachea, where formerly death was the rule even where intubation or tracheotomy was performed, I confidently expect to rescue a fair proportion of the patients without operation, two thirds, as my cases show, and in addition two thirds of those operated upon, since only one out of three intubated perished, or a loss of one croup case out of nine. I am confident that under the old methods the figures would have been almost reversed. Where intubation is performed we are able to remove the tube much earlier than formerly, since it is only necessary to carry it two or three days, where under the old methods a week was the shortest time, and not uncommonly two or three, so that many patients perished of pneumonia and bronchitis produced by the aspiration of the poisons in the throat and the entrance of foreign bodies—food particles, etc. The short time that it is necessary to carry the tube considerably lessens the danger of these complications.

The arrest of membrane formation and its rapid melting away happen too frequently to be a mere coincidence. In ten of the cases treated there was a sufficient extension of the process to the nose to constitute an important complication. This complication was present in two of the fatal cases already enumerated. In not more than six of the twenty-nine cases was the membrane limited to the tonsils and arches of the palate, so that, so far from being used in selected cases, the antitoxine was relied upon in the most serious cases, and a test was made of its power. If it can not enable us to rescue the patients in otherwise fatal cases, it is of little value in general practice. The general practitioner is not searching for scientific novelties or curiosity, but for remedies of practical value and power at the bedside.

One thing that has especially impressed me is the remarkable improvement in the general condition of the patient shortly after its use. This improvement extends to all features of the disease—pulse, temperature, rest, and general well-being. It is not uncommon to find a seriously sick child playing at the next visit. Some practitioners here who deny or are in doubt as to its value as a remedy for diphtheria insist upon its use as a cardiac stimulant. One practitioner, for whom I did an intubation, pushed the remedy in heroic doses, because he always observed an improvement in the general condition immediately after its use, and asserted its superiority to alcohol as a stimulant.

And the general improvement is not delayed twenty-four or forty-eight hours, as is stated in the article by Dr. William H. Welch; I have seen it in four to eight hours in several cases. In twelve hours I have seen marked reduction in the swelling and size of the glands of the neck, membranes loosened and large patches coughed up, and the heart's action decidedly improved. In only three of the twenty-nine cases were there any symptoms of paralysis that were in the nature of sequelæ, and these were mild, and limited almost to difficulty in swallowing food or liquids. It is, of course, to be understood that in the two septic cases the patients died with marked symptoms of heart failure.

In many of these cases the diagnosis was confirmed by bacteriological observations and in others not. A majority were consultation cases. For the same reason I am unable to give age and day of the disease with such accuracy as to be of statistical value.

Several cases were mixed infections, and three of these are among the fatal cases.

Chart showing the Use of Antitoxine in Diphtheria and Membranous Croup.

Number of cases—Twenty-nine.

Times used in each case: In one case, five; one, six; two, four; four, three; five, two; and others only one.

Day of disease used: Can not state with any accuracy.

Male or female: Thirteen females and sixteen males.

Age of each: Can not state with any accuracy.

Number of families—Sixteen.

Number of cases in each: In one family, eight cases—two fatal, the patients dying when antitoxine was used.

Number of cases of membranous croup—Nine. Three intubations, with one death.

Times used in each case: Five, six, four, three, two, one.

Result: One death.

Number of immunizing injections given: Fifteen.

Result: Three cases of diphtheria—two patients came down the next day, so that they were already infected. All mild cases; most of these in families where one or more members were sick with diphtheria.

Were they followed by any unfavorable symptoms? No.

Original location of the disease and extension to other parts: Nose, tonsils, pharynx, larynx; limited to tonsils in six cases; seldom any extension after using antitoxine.

Did the disease extend in any case after injection was used? Seldom.

Did death occur in any case where injection was used within the first forty-eight hours of the disease? No.

Did you notice any unfavorable effect of the injection? Slight redness and soreness at the place of injection in three cases.

Result of treatment, number of deaths—Four—two moribund when used.

How long after the injection? Twenty minutes, six hours, twelve hours. Intubated, sixty hours.

Day of disease:

Number of cases followed by sequelæ: Some of the patients had albuminuria, but I can not say that it was in the nature of a sequela.

What sequelæ and result? Two or three had slight symptoms of paralysis after the disease ended.

Nineteen of these cases were seen in consultation, so that they were of more than average severity.

WILL IRON CURE ANÆMIA?

By SAMUEL WOLFE, A. M., M. D.,
PHILADELPHIA.

There are some men who manage to practise medicine without prescribing alcoholic stimulants, others who eschew opium and its derivatives, and still others who would under no circumstances use mercury.

We find physicians who will not bleed, who will limit themselves to vegetable preparations, who attempt to treat all their patients with water or electricity in their various forms of application.

There are too many great names among those who have thus arbitrarily limited their range of therapeutics to allow those who may differ with them to apply such terms as narrow or prejudiced or dogmatic in a wholesale and indiscriminate way. It is better to recognize an amplitude of resource from which discriminate and successful selection is possible. The physician himself is always a great factor, and a very careful and thorough application of sanitary measures of a hygienic order may really leave but little for mere drugs to accomplish. Our respect for those who seek for the causes of disease and recognize the necessity of their removal must always mount higher than for those who see their chief duty in the apprehension of symptoms and mere prescription-writing for their arrest.

The treatment of anæmia without the use of iron is quite possible in a very large number of cases. Indeed, it is just as practicable as the treatment of indigestion without pepsin or pancreatin; as of headache without the coal-tar derivatives or bromides; as of inflammations without salines or mercury or antiseptics.

He is truly narrow who looks on these agents as absolute essentials. They are among the resources of art which have become engrafted on our civilization. They appeal to mankind as do the other products of an advanced era in its history. The very current of progress sweeps us away from the primitive and simple to the complex and artistic.

The writing of this paper has been mainly instigated by a contribution to the *New York Medical Journal* for February 15, 1896, by Dr. Loveland, on Food *versus* Medicine as a Blood-maker. The main line of his argument is that blood can only be reconstructed through food; that whatever influence chalybeates may have in bringing about the desired end, is not exerted by contributing of their own ferruginous principles to the hæmoglobin, but by affecting digestive or assimilative processes or other indirect methods. He cites cases in which the percentage of hæmoglobin was far below the normal, the corpuscles reduced in number, and the symptoms of anæmia otherwise well marked. With a highly nutritious diet and agents calculated to regulate the digestive functions he gained his point in the restoration of the blood crasis and the dissipation of the symptoms, the average time of treatment being about four months. In several cases in which he used ferratin, or Blaud's pills, or some other preparation of iron, there was about the same average result. He, however, concludes that there was no disturbing action from the ferratin, and that it was better tolerated than the "older preparations of iron."

Dr. Loveland, as well as most other practitioners, will admit that the great mass of anæmic cases are treated without preliminary blood-corpuscle counting or analysis; that in the absence of any gross digestive disturbances, which have generally been regarded as contraindicating iron, the great body of medical men will continue to write for that drug when they find the more easily determined symptoms of anæmia. His admission of the tolerance of such patients for ferratin is therefore not without value.

When the sum total of experience with the old inorganic preparations of iron is taken into account, it is exceedingly difficult to convince any great number of clinicians that they have only indirect value in reconstructing the

blood. When we come to the organic preparations which modern chemistry has introduced, all that we have learned of physiological chemistry leads us even at the outset to regard them with great favor and expectation. Evidence of their superior value has already accumulated in vast proportions and from all sides. Among these organic preparations ferratin holds a front rank. In addition to what the writer has already reported in the *New York Medical Journal*, December 7, 1895, there has been later evidence of its power. It can be relied on as a non-irritating and efficient chalybeate, and prescribed with confidence in anæmic conditions generally.

1701 Diamond Street.

A RÖNTGEN PICTURE OF THE BONES OF THE WRIST AND HAND.

By WILLIAM J. MORTON, M. D.

This picture is of interest because of its definition and uniformity in measurements to the original. These qualities are suggestive of a greater usefulness of the X ray than was at first thought of in studying disease and deformities of living osseous tissue. The ring is an instance of a "shadowgraph," but the bones show a modulation of shadow of great nicety. The cylindrical character of the long bones is shown, also the roughened ends of the terminal phalanges, and the pisiform bone even, completely covered by the unciform, is located. A fracture at the wrist would evidently have been accurately defined.

Many other points of surgical interest will suggest themselves to the observer. The picture is purposely an "overexposure." Five minutes would have sufficed to give the simple outlines of the bones in uniform black color.

THE TRUE MEDICINAL, CURATIVE DOSE OF SULPHATE OF MORPHINE.

By FRANK W. ROOT, M. D.,
KENT, OHIO.

Our pharmacopœias state that the adult dose of sulphate of morphine is from an eighth to a fifth of a grain, this being the equivalent of a one-grain dose of opium.

For twenty years my administering of this salt of opium conformed to this rule of doses, rarely diminishing, often greatly increasing its size to obtain the desired anodyne, quieting, or soporific effect, as the case demanded, and yet occasionally I so employ it.

For five years past I have been using the drug in the following manner, and the result is so entirely satisfactory that I have felt constrained to present the same for the consideration and examination of my professional brethren.

I carry in my case a small package of one-eighth-grain powders of sulphate of morphine, to each of which is added a grain of pulverized boric acid. When called to administer this remedy, whose field of therapeutic usefulness seems to me so vastly increased, I dissolve one of these powders in four teaspoonfuls of water, and after it is well dissolved I take a teaspoonful of this, put it into a glass, and add to it nine teaspoonfuls of water, and from this I give the patient (infant or adult) a teaspoonful—equal to one three-hundred-and-twentieth of a grain—every five or ten minutes, repeating the dose till the desired effect is obtained.

Since so employing this drug I have found it the most sovereign remedy for controlling the attacks of megrim headache and for arresting the diarrhœa, colicky pains, and nervous irritability of intestinal catarrh, whether due to cholera infantum or catarrh of the bowel as a sequel of *la grippe* in the adult.

In cholera infantum, four or five doses during a forenoon—equal to one eightieth or one sixty-fourth of a grain—and a like amount given in the afternoon, associated with proper dietary and withholding of all milk, at once give the physician the control of the disease. I explain its immediate happy effect in its power to soothe the splanchnic, sympathetic, and spinal intestinal nerve centres, thereby arresting at once the congested state of the intestinal vessels. It may be necessary in some instances of this disease to repeat the dose till some cyanosis of the face is noticed before its full quieting effect is derived, but in the year- or two- or even three-year old child few doses are required to produce this result, and following it there is none of that unpleasant secondary effect that results from the giving of large doses.

In controlling the restlessness and excited state of the brain in mania a potu and inducing sleep in these patients, or in its power to sustain the brain until sleep comes to the relief of the patient, nothing in the armamentarium of remedies is so helpful as this drug in doses of these sizes. In these cases its anæsthetic effect may be increased by giving chloral hydrate in fairly sized doses from time to time; but keep the morphine solution by itself, that you may increase or diminish it at your pleasure, remembering that overdoses of this drug are too often followed by effusion into the ventricles, with resulting brain paralysis.

In preventing the after-pains of labor, I begin giving the remedy as soon after the completion of labor as possible. This at once imparts a stimulating, revivifying, soothing effect that is most grateful to the patient, and often, where the previous labors were attended with severest after-pains lasting many hours and sometimes days, this drug in these doses, while not wholly controlling all pain, does so sufficiently to effect a most soothing influence through this frequently painful period of convalescence of labor.

In cases of uterine inertia following protracted or fatiguing labor associated with that general feeling of muscular soreness and exhaustion, a few of these one three-hundred-and-twentieth-grain doses of the solution will so rest and strengthen the patient by stimulating vaso-motor centres and unloading the overdistended venous vessels of the muscular tissues of the uterus that it grants the patient a most refreshing period of rest, in which all her nervous forces are marvelously recuperated, often bringing about a speedy termination of labor that would, but for the drug's effect,

Röntgen picture of the bones of the wrist and hand, taken by Dr. William J. Morton (his own hand). Time of exposure, fifteen minutes. Distance of bulb, one foot.

have lasted hours and possibly have necessitated instrumental assistance.

In croupous pneumonia these doses—four, six, or eight daily—through the first few days, before the system has accommodated itself to the elevated temperatures, assist the accommodation, lessen tissue metamorphosis, tend to prevent the formation of bodily leucomaines and ptomaines, and are sustaining and comforting to the patient.

In assisting the reaction of the patient after severe injuries, the administering of these apparently small doses by the stomach, or hypodermically where vomiting is present, will be found much better than the giving of the heavy paralyzing hypodermic that is so generally employed, and which is followed by vital depression and perverted or retarded cellular function at the seat of injury, whose normal healthful action is so needful for the quick repair of the injured tissues.

But it is in the case of the marasmic, tabetic child, or the adult with ulceration of bowel in the terminal stage of long, wasting, hectic affections, that this drug in doses of these sizes proves the most effective palliative, controlling the frequency of the discharges, arresting the colicky spasms of the intestine, the painful tenesmus, greatly diminishing the painful reflex excitations without exciting increase of peristaltic action.

In all cases of biliary or nephritic colic, by all means try the effect of a few of these small doses before resorting to the usual hypodermic injections.

It was recently my pleasure to try the effect upon a patient suffering with well-defined renal colic. His suffering was intense. He was standing bent forward, with hands on knees, hardly able to step, bathed with sweat, the face pale and pinched, the voice aphonic, complaining of intense pain in the right loin in the region of the ureter radiating to the thigh, with numbness of right limb. I administered the one three-hundred-and-twentieth-of-a-grain dose of sulphate of morphine, and in five minutes' time he was speaking in a more natural voice, and had unconsciously assumed the almost erect position, although still slightly stooped, with the hands resting on the thighs. On my repeating the dose, he was within the succeeding five minutes almost wholly free from pain, slowly walking about the room, the sweat arrested, the bursting, burning rectal and urethral tenesmus controlled, and the general circulation normally re-established. A third dose gave perfect and lasting relief, the terminal symptom (a free flow of urine) indicating that the spasm of the ureter was overcome, and its flushing had probably carried the calculus into the bladder.

I remember assisting, some years ago, at a post-mortem where the examination revealed every vital organ in perfect health. The patient, a robust man of forty-five, had died from the passage of a renal calculus through the left ureter. The stone was no larger than a bean, but had caused such intense agony (though two ordinary-sized doses of morphine had been hypodermically administered) that death had followed as from shock, paralysis of the heart speedily following on the completion of the stone's passage.

From testing the effect of morphine in these small doses one will be soon satisfied that the motor centres that preside over the white striated muscular fibres of the internal viscera are peculiarly sensitive to its action, that the usual one-sixth or one-eighth-of-a-grain doses excite strong convulsive muscular action in their tissues, while the desired happy soothing and anodyne effects can be obtained through the use of these truly medicinal one three-hundred-and-twentieth grain doses.

Those who will make trial of the drug in this manner will feel that in the field of infantile and child sickness, and in the neurotic, hysterical, and painful visceral affections of the adult, almost a new remedy has come to the hand of the physician, one of more than anodyne and soporific worth, but one that is all that, with vastly additional disease-controlling power.

THE ABSORPTIVE POWER OF THE LARGE INTESTINE.

By JOSEPH CLEMENTS, M. D.,
KANSAS CITY, MO.

The very interesting case of Dr. John P. McNeill, of Australia, cited in the *Journal* of February 1st, of the use of a copious injection of a warm saline solution, voluminously filling the colon of a patient who was in a moribund condition from hæmorrhage after abortion, is one of more than passing interest, and is deserving of the thoughtful attention of the profession. Dr. McNeill is certainly correct in thinking that the "absorptive capacity of the large intestine has not been sufficiently recognized."

The use of a tube long enough to reach into the sigmoid flexure may be an advantage, but is not at all necessary. The enema, given dorsal decubitus, will surely find its way the entire length of the colon, as the writer has many times verified, using an ordinary fountain syringe.

Ten years ago an article appeared in a London medical journal, giving a record of the use of this power of absorption of the colon in conveying medicaments to the kidneys in acute inflammatory attacks. The writer has used this again and again with success. The colon is cleansed by copious enemata of water, after which about a quart of medicated solution is injected through the rectum, the anus is padded, the hips are raised on a pillow, and the patient is directed to aid the sphincter, by force of will, to retain the fluid. Not a drop escapes per anum, but instead, within an hour the bladder is evacuated in the usual way, and this repeated shortly afterward, affording speedy relief from pain and amelioration of the symptoms of the inflammatory attack. And is there not here opened up to us a large field of investigation, giving great promise of useful results?

The Cleveland Medical Gazette.—The editorial management of this excellent journal has passed into the hands of Dr. S. W. Kelley, who for a long time has pulled the laboring oar in the *Gazette's* progress, and who has done much to maintain the standard of excellence to which the *Gazette* has attained. Now that he has the tiller as well as the oar, we have every reason to believe that the *Gazette* will improve in proportion to the added responsibility of its new editor. The *Gazette* has our best wishes for the future, as it has had our hearty co-operation in the past.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co.
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, APRIL 18, 1896.

THE TAINTED OYSTER.

The oyster has this in common with the little girl of the nursery rhyme, that when it is good—and that is almost always—it is very, very good, and when it is bad it is horrid. So horrid, in fact, is a bad oyster that it is strange it should ever find its way to the table, stranger still that it should be taken into the mouth, and strangest of all that it should actually be swallowed. He who really swallows a tainted oyster must be either drunk or on the verge of starvation. Too much drink, yet not enough to take away his sense of taste, seems to have had something to do with the case of a military officer whose fatal poisoning is related by Dr. Anton Brosch in the *Wiener klinische Wochenschrift* for March 26th. He was one of a party that took supper in a restaurant at about midnight on October 31, 1895, and he seems to have been the only one of them that took oysters. According to his companions, after swallowing one of them he was heard to exclaim: "Pheu, but it was bad [*Pfui, war die aber schlecht*]!" All the others of the party escaped harm, but this officer went home, and no sooner had he gone to bed than he vomited several times. In the morning he suffered with stitchlike pains in the sides and severe headache. In the course of the forenoon he found that he did not see well; everything seemed misty. Then there supervened difficulty of swallowing, salivation, and impossibility of passing urine. At first the patient took these occurrences as the manifestations of severe "Katzenjammer," but, as they kept increasing in intensity, toward noon he sent for a physician, whom he told that he had no pain, but was very hungry. A great deal of saliva collected in his mouth, and he found it impossible either to swallow it or to eject it. Meantime, his other difficulties, impaired vision, especially for near objects, and inability to pass urine, had increased.

The doctor's first impression was that the man was drunk, but his brain was perfectly clear. The right half of his face was relaxed and the right labio-nasal furrow effaced. To the right of the median line, the lips were motionless, but on the left side they were actively mobile. The tongue could be thrust out promptly and without any observable deviation. Nothing abnormal was noted about the fauces. The right pupil was decidedly dilated, but at command the eyelids were closed tight and opened again. There was deviation of the right eye, but its precise direction was not noted. The man's speech was hard to understand, resembling that of a person with severe inflammation of the tonsils. He was sitting up in bed supported with his hands, but he got out of bed without help and took eight or ten steps without support, after which he turned back and sat down again on the edge of the bed. He walked with his feet far apart, and his gait was shaky and uncertain; when he turned he reeled. His face was remarkably pale. He made no complaint of abdominal pain, but, besides his inability to clear his mouth of the abundant saliva, only of repletion of the bladder, which he could not empty.

His immediate removal to the hospital was advised, and very soon, in not more than five minutes after his departure, the man's servant brought word to the doctor that things were going very badly with his master. It was now found that his face was cyanotic, that his head drooped forward as he sat on the edge of the bed, that the muscles of his limbs were limp, that there was a copious flow of saliva, and that he was still conscious, although by the strictest attention what he said could not be made out. On being laid at full length, he recovered a little and ptosis of the right eye was noted. In about two minutes more he was found to be dead; his breathing had wholly ceased, but the pulse was perceptible for about two minutes longer.

On post-mortem examination, an abundance of dark, fluid blood was found in the longitudinal sinuses and in the transverse sinus. There were several extravasations as large as a pinhead in the cerebellum. The substance of the pons Varolii and that of the medulla oblongata were rather rich in blood. The spinal dura mater was studded on its inner surface with minute, firm, fatlike nodules. The spinal pia mater was highly infiltrated and, especially in the dorsal and lumbar portions of the spinal cord, thickened. In the substance of the cord itself, in the lumbar portion of the lower half of the dorsal portion, there were hæmorrhagic effusions of various sizes, mostly in the gray matter. The vessels at the base of the brain were rigid and partly calcified. The left side of the heart was contracted and empty of blood; the right side was relaxed and contained a small quantity of dark, fluid blood. There was no formation of clots. The epicardium of the posterior aspect of the heart showed several extravasations of blood as large as a pinhead. The muscular substance of the heart was of a glistening grayish-brown color. Each pleura showed numerous extravasations of blood of the size of a pinhead, and thick, dark blood issued from the vessels cut in making sections of the lungs. Several punctiform hæmorrhages were observed on the epiglottis. The spleen was enlarged, and its capsule was soft and smooth; its substance was brownish-red and tolerably firm. There were ecchymoses in the cardial portion of the mucous membrane of the stomach. That of the last coil of the small intestine showed numerous little hæmorrhages; the follicles and patches were not swollen, and the mesenteric glands were not enlarged. The liver, which was of a reddish-brown color, was peculiarly spotted, especially on section, with yellowish, irregularly defined masses. The bladder was filled with clear, light-yellow urine; its mucous membrane was soft and pale. Microscopically, there was well-marked parenchymatous degenera-

tion of the muscular fibres of the heart and of the renal epithelia. The protoplasm of the hepatic cells was pervaded by fat globules of various sizes. Careful bacteriological examination failed to disclose evidence of anthrax or any other like mycotic invasion, and no poisons were found, on chemical investigation, save traces of ptomainelike bodies.

Dr. Brosch thinks that this is the first case on record in which death has been certainly traced to oyster poisoning, and he contrasts the predominance of its paralytic features with the choleralike course of fish poisoning in general. As regards the treatment of such accidents, he suggests: 1. Evacuation of the digestive tract, especially the removal of remnants of the poison from the stomach by means of the stomach-pump, and high irrigation of the intestine. 2. Frequent emptying of the bladder with the catheter. 3. Artificial feeding through the œsophageal tube. 4. Artificial respiration when spontaneous breathing begins to fail, to be kept up for hours, until the great mass of the poison has been eliminated by the kidneys.

MINOR PARAGRAPHS.

THE *BULLETIN OF THE JOHNS HOPKINS HOSPITAL.*

THE *Bulletin* is always meritorious, but the February-March double number recently issued merits special commendation. The articles, by Dr. Kelly, Dr. Clark, and Dr. Miller, are in the highest degree valuable, and the illustrations are uncommonly well done. The *Bulletin* is one of the most efficient vehicles of the best thought and work of the medical men of the Johns Hopkins University.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending April 14, 1896:

DISEASES.	Week ending Apr. 7.		Week ending Apr. 14.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	9	2	2	1
Scarlet fever	113	12	119	6
Cerebro-spinal meningitis	3	3	5	3
Measles	450	26	535	30
Diphtheria	225	24	227	37
Tuberculosis	223	124	172	142

The Wilhelm Meyer Memorial.—As was announced some time ago, the death of Dr. Wilhelm Meyer, of Copenhagen, who first called attention to the condition known as adenoid hypertrophy at the vault of the pharynx and described efficient means for its relief, has been followed by a movement of an unusual nature. It is proposed to erect a monument to Dr. Meyer in Copenhagen, by subscriptions collected all over the civilized world from physicians interested in the operation for the cure of adenoids and from patients who have been relieved by it. The cost of such a monument in Copenhagen is about a quarter of what it would be here. For the furtherance of the enterprise an international committee has been formed in Europe, the members of which are the presidents of the various national associations of laryngology. The representative upon the international committee for the United States is Dr. William H. Daly. Dr. Daly has appointed a national committee for this country, with Dr. D. Bryson Delavan as chairman and, as active members,

Dr. Harrison Allen, Philadelphia.
Dr. C. E. Bean, St. Paul.
Dr. J. H. Bryan, Washington.
Dr. J. W. Farlow, Boston.
Dr. F. W. Hinkel, Buffalo.
Dr. J. E. Logan, Kansas City.
Dr. A. Mathewson, Brooklyn.
Dr. J. C. Mulhall, St. Louis.
Dr. A. W. de Roaldes, New Orleans.
Dr. C. W. Shields, Richmond.
Dr. S. E. Solly, Colorado Springs.
Dr. A. B. Thrasher, Cincinnati.
Dr. H. E. Wagner, San Francisco.
Dr. Gorham Bacon, New York.
Dr. H. S. Birkett, Montreal.
Dr. M. R. Brown, Chicago.
Dr. T. R. French, Brooklyn.
Dr. Samuel Johnston, Baltimore.
Dr. J. H. Lowman, Cleveland.
Dr. H. G. Miller, Providence.
Dr. W. P. Porcher, Charleston.
Dr. J. O. Roe, Rochester.
Dr. E. L. Shurly, Detroit.
Dr. H. L. Swain, New Haven.
Dr. M. R. Ward, Pittsburgh.
Dr. G. V. Woolen, Indianapolis.

It is hoped that, under the direction of the above-named gentlemen, who, it will be seen, have been selected to represent every part of the country, the collection of the desired amount of money will soon be accomplished. The treasurer for the New York division is Dr. Robert C. Myles, to whom, or to the chairman, Dr. Delavan, or to Dr. T. R. French, of Brooklyn, subscriptions should be sent.

The Transactions of the Pan-American Medical Congress.—Dr. Charles A. L. Reed, secretary general of the Pan-American Medical Congress, asks us to state, in reply to general inquiry relative to the *Transactions* of the Washington meeting, that he transmitted the completely compiled manuscript to the State Department on November 25, 1893, and that since that date it has not been in his custody or under his control or that of Dr. Pepper, but has been the property of the United States Government. The congress then in session ordered the *Transactions* printed and bound in cloth, and it is understood that this has been done through the Government Printing Office, and that the edition has been delivered to the State Department, under the frank of which the volumes are to be distributed to members and correspondents in the United States, Mexico, and Canada. Postal provisions remain to be made for copies going outside these countries. The complete mailing list of the congress is in the possession of the Department of State, Washington, to which all inquiries should be addressed.

The New York Academy of Medicine.—At the last stated meeting, on Thursday evening, the 16th inst., Dr. F. X. Dercum, of Philadelphia, was to read a paper on Scleroderma, and the subject was to be discussed by Dr. M. Allen Starr, Dr. A. Jacobi, Dr. C. L. Dana, Dr. Henry G. Piffard, Dr. B. Sachs, and others.

At the next meeting of the Section in Ophthalmology and Otology, on Monday evening, the 20th inst., the following papers will be read: Remarks on Disease of the Sinuses, by

Dr. Emil Gruening; and The Use of Extract of Suprarenal Capsule in the Eye; a Preliminary Report, by Dr. W. H. Bates. Patients will be presented.

At the next meeting of the Section in General Medicine, on Tuesday evening, the 21st inst., a paper entitled The Treatment of Pulmonary Tuberculosis will be read by Dr. Irwin Howell Hance, and the subject will be discussed by Dr. Beverley Robinson, Dr. Simon Baruch, Dr. Andrew H. Smith, Dr. Henry P. Loomis, Dr. Walter James, and others.

At the next meeting of the Section in Laryngology, on Wednesday evening, the 22d inst., a paper entitled Notes on New Remedies in the Treatment of Diseases of the Upper Air Tract will be read by Dr. Carl E. Munger, and one on Primary and Secondary Pharyngeal Tuberculosis from a Clinical Standpoint, by Dr. Walter F. Chappell. Cases will be presented and new instruments and apparatus exhibited.

At the next meeting of the Section in Obstetrics and Gynæcology, on Thursday evening, the 23d inst., Dr. W. Gill Wylie will read a paper entitled The Reflex Symptoms Due to Diseases of the Uterus which Cause Enlargement. Cases will be reported, and new instruments and specimens exhibited.

The Cartwright Lectures.—The third lecture of this series, on The Morphology of the Bronchial System and its Relation to the Pulmonary Vascular Supply in Mammalia, will be given by Dr. George S. Huntington in the Academy of Medicine on Wednesday evening, the 22d inst.

The Late Dr. Späth, of Vienna.—We learn from the *Wiener klinische Wochenschrift* that the distinguished obstetrician, Dr. Joseph Späth, died on the 29th of March, in his seventy-fourth year.

St. Vincent's Hospital.—Dr. Francis J. Quinlan has been appointed laryngologist and rhinologist to the hospital.

Changes of Address.—Dr. James J. Concanon, to No. 241 West Thirty-fourth Street, New York; Dr. S. Herzog, from Hoboken, N. J., to Brazona, Tex.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from April 5 to April 11, 1896:*

Munday, Benjamin, Captain and Assistant Surgeon, is relieved from duty at Fort Niobrara, Nebraska, to take effect upon the expiration of his present sick leave, and ordered to Fort Wayne, Michigan, for duty at that post.

Heyl, Ashton B., Captain and Assistant Surgeon, is granted leave of absence for one month, to take effect on or about April 20, 1896.

Jarvis, Nathan S., Captain and Assistant Surgeon, is granted leave of absence for one month and five days.

Newgarden, George J., First Lieutenant and Assistant Surgeon, is relieved from duty at Fort Wayne, Michigan, and ordered to Fort Yates, North Dakota, for duty at that post.

Shillock, Paul, Captain and Assistant Surgeon, is granted leave of absence for four months, to take effect on or about May 1, 1896.

Society Meetings for the Coming Week:

Monday, *April 20th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Cleveland Society of the Medical Sciences; Hartford, Conn., Medical Society; Chicago Medical Society.

Tuesday, *April 21st:* Medical Association of Montana (first day—Bozeman); Medical Association of the State of Alabama (first day—Montgomery); Medical Society of the State of California (first day—Los Angeles); New York Academy of Medicine (Section in General Medicine); New York Obstetrical Society (private); Buffalo Academy of Medicine (Section in Pathology); Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Society of the County of Kings, N. Y.; Baltimore Academy of Medicine; Passaic, N. J., County Medical Society (annual).

Wednesday, *April 22d:* South Carolina Medical Association (first day—Spartanburgh); Medical Association of Montana (second day); Medical Association of the State of Alabama (second day); Medical Society of the State of California (second day); New York Academy of Medicine (Section in Laryngology and Rhinology); New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Medical Society of the County of Albany, N. Y.; Philadelphia County Medical Society.

Thursday, *April 23d:* South Carolina Medical Association (second day); Medical Association of Montana (third day); Medical Association of the State of Alabama (third day); Medical Society of the State of California (third day); New York Academy of Medicine (Section in Obstetrics and Gynæcology); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Mass., Society for Medical Improvement (private—annual); Hartford, Conn., Medical Association (annual); Pathological Society of Philadelphia (conversational).

Friday, *April 24th:* South Carolina Medical Association (third day); Medical Association of the State of Alabama (fourth day); New York Clinical Society (private—annual); New York Society of German Physicians; Yorkville Medical Association, New York (private); Philadelphia Clinical Society; Philadelphia Laryngological Society; St. Louis Academy of Medical and Surgical Sciences; Cleveland Medical Society.

Saturday, *April 25th:* New York Medical and Surgical Society (private); St. Louis Medical Society; Worcester, Mass., North District Medical Society (annual—Fitchburg).

Births, Marriages, and Deaths.

Married.

Achee—Scott.—In New Orleans, on Wednesday, April 8th, Dr. Andrew C. Achee, of Plaquemine, La., and Miss Laura Scott.

Archinard—De Verges.—In New Orleans, on Wednesday, April 8th, Dr. Louis D. Archinard and Miss Corinne De Verges.

Campbell—Fahnestock.—In New York, on Tuesday, April 14th, Dr. Clarence Gordon Campbell and Miss Helen Fahnestock.

Crane—Murphy.—In New Orleans, on Wednesday, April 8th, Mr. Warren Joseph Crane and Miss Marie Josephine Murphy, daughter of Dr. A. E. Murphy.

Darrington—Gilruth.—In Yazoo City, Miss., on Tuesday, April 7th, Dr. John Darrington and Miss Pauline Gilruth.

Kearney—Levert.—In New Orleans, on Wednesday, April 8th, Dr. Francis James Kearney, of Plaquemine, La., and Miss Mathilde Marie Levert.

Somerville—Jones.—In Carrollton, Miss., on Wednesday, April 8th, Dr. William G. Somerville, of Tuskaloosa, Ala., and Miss Minter Jones.

Wunderlich—Rainey.—In New Orleans, on Wednesday, April 8th, Dr. William Wunderlich and Miss Eva Rainey.

Died.

Bosworth.—In Chicago, on Friday, April 3d, Dr. A. W. Bosworth, aged fifty-three years.

Carter.—In Dallas, Tex., on Monday, April 6th, Dr. John L. Carter, in the sixty-third year of his age.

Daly.—In Rahway, N. J., on Tuesday, April 14th, Dr. John J. Daly, in the forty-fourth year of his age.

Kinniment.—In Chicago, on Tuesday, March 31st, Dr. D. L. Kinniment, aged sixty-three years.

Mapes.—In Saranac Lake, N. Y., on Friday, April 10th, Dr. James J. Mapes, of New York, aged thirty years.

McKenzie.—In Leroy, Ill., on Monday, April 13th, Dr. John F. McKenzie, aged fifty-three years.

Roosevelt.—In New York, on Friday, April 10th, Dr. J. West Roosevelt, in the thirty-eighth year of his age.

Obituaries.

J. WEST ROOSEVELT, M. D.

The announcement on Friday, April 13th, of Dr. Roosevelt's sudden death from pneumonia, after but a few hours' illness, was a shock to the large number of physicians of this city and elsewhere who knew him well and who experience a personal loss in his untimely death.

Although only in his thirty-eighth year when his career was ended, Dr. Roosevelt was already prominent among the professional men of New York, both as a physician and as a man of literary attainments. He was a frequent contributor to the medical journals and his name was often signed to articles in the magazines and papers devoted to general literature. An article on Hospital Life, in *Scribner's Magazine*, has attracted much attention and parts of it have been extensively copied by papers throughout the country. He has also contributed articles to Buck's *Reference Handbook of the Medical Sciences* and other publications, and he was the editor of a valuable book on general medical subjects which is now in press.

For a number of years Dr. Roosevelt devoted much of his time to investigations of morbid conditions of the lungs, and his extensive studies of the minute anatomy of the lungs by means of corrosion preparations are well known. Dr. Roosevelt graduated from the School of Mines of Columbia College and then entered the College of Physicians and Surgeons, of this city, from which he graduated in 1880. He then became a member of the house staff of the Roosevelt Hospital and entered into his duties with characteristic energy and zeal. He was one of the best house physicians that ever graduated from this hospital, and immediately after completing his term of service he was appointed assistant pathologist to the hospital. Soon after, he, together with Dr. Halsted, organized the out-patient department of the hospital, which, beginning in a small way, soon grew to be so large and flourishing a branch of the hospital that the trustees erected a special building for it. In 1887 Dr. Roosevelt resigned from the charge of the out-patient department to become full attending physician in the Roosevelt Hospital. Before this he had been appointed visiting physician to Bellevue Hospital, and he continued to hold both positions up to the time of his death.

A little over a year ago he was invited to organize the Seton Hospital for Consumptives at Spuyten Duyvil, and this he did with his accustomed energy and care. He took a great interest in this institution and, in addition to giving his time and advice, he personally assumed the expense of fitting up its very complete pathological laboratory. He was a trustee of the Woman's Medical College, and at one time he was professor of the practice of medicine there. He was also professor of the practice of medicine at the New York Post-graduate Medical School and Hospital for a time.

He was a member of the Association of American Physicians, of the New York Academy of Medicine, of the Medical Society of the County of New York, of the Medical and Surgical Society, of the Practitioners' Society, of the Pathological Society, of the Physicians' Mutual Aid Association, and of the Society for the Relief of Widows and Orphans of Medical Men. He was also a member of the Century and St. Anthony Clubs, and he was a member and fleet surgeon of the Seawanhaka Yacht Club.

Dr. Roosevelt took a lively interest in all the prominent topics of the day, and this interest led him to be active in many public affairs, particularly the agitation in favor of a national quarantine and in the exposure of the sanitary condition of the Croton watershed. In the latter he was very much absorbed, and he spent much time in a personal inspection of this area, and by his vigorous public utterances in regard to the matter did much toward correcting the evil.

It is in his private life that his friends will most miss him, for he had many friends. He was a man singularly attractive and of singular sweetness of disposition, of broad education, and of a most liberal spirit. He was an interesting talker, and in his conversation he showed remarkable familiarity with many and diverse subjects. He was a good friend and one whose friendship never faltered. He was strong in his feelings and in his convictions, but thoroughly honest in the expression of them, and his heart was full of charity for all.

It will be hard to fill the void that he has left, but all who have shared his friendship must feel that his life has added to their happiness and that his memory can never fade.

[The foregoing was written by one of Dr. Roosevelt's most intimate friends. The editor wishes to add that in Dr. Roosevelt's death the *New York Medical Journal* has met with a heavy loss. He was a member of our editorial staff, most helpful as a writer and as a counsellor, quick of perception, sound in deduction, and wise in action.]

Letters to the Editor.

THE PHOTO-FLUOROSCOPE.

New York, *April 14, 1896.*

To the Editor of the New York Medical Journal:

Sir: Will you do me the honor of allowing me to make known an invention which I propose to call the photo-fluoroscope?

Since the Röntgen light and pictures have been brought before the scientific and lay world, almost everybody has

taken a keen interest in them, and many are working up the problems, both from theoretical and from practical points. The most noted and useful one, up to the present time, is the fluoroscope, which allows the eye to look directly through opaque objects in connection with the Crookes tube. My work and experiments have been in a line which not only will allow the object to be viewed directly by means of a fluoroscope, but what is thus seen by it can be photographed with a very short period of exposure. You can readily see that a great advance has been made. Will you, therefore, print this letter simply to register my priority over those who might stumble on the same project and invention?

The photo-fluoroscope is so arranged that it can be used both for viewing objects and for photographing. The fluoroscope itself is somewhat like Edison's, with this difference, that it is arranged on a swivel stand, to which up-and-down and side motions may be given, allowing the operator to observe any part of the body or of an object. The surgeon puts on a pair of spectacles which are like opera glasses and have a series of lenses. He looks through the fluoroscope at the object to be examined, and when it has been viewed and the parts examined a photograph by direct focus can be taken by the additional attachment of a camera.

A sensitivized plate is placed at the light end of the fluoroscope within a camera. The picture shown on the fluorescent screen is transmitted to the dry plate, so that the surgeon is certain to get exactly what he sees. This idea is entirely an original one, as every scientist can testify, and it is considered by experts to be the most important of the series of elaboration of the Röntgen discoveries.

The complete description and illustration I shall publish at the earliest possible moment. J. Mount Bleyer, M. D.

Proceedings of Societies.

TRI-STATE MEDICAL SOCIETY OF IOWA, ILLINOIS, AND MISSOURI.

Fourth Annual Meeting, held in Chicago on Tuesday, Wednesday, and Thursday, April 7, 8, and 9, 1896.

The President, Dr. R. H. Babcock, of Chicago, in the Chair.

The President's Address: Antitoxine or Serum Therapy.—The President said the crowning achievement in this line of research had come through the chemistry of bacteriology. Nuttall had conclusively demonstrated in 1888 the power possessed by the blood serum of combating the poisonous products of bacterial growth, but to Behring and Kitasato belonged the credit of having found, in 1891, a practical means of utilizing antitoxines in the treatment of disease. To those who decried the antitoxine treatment of diphtheria as dangerous and spoke of its advantages as not yet proved, he commended the criticism by Dr. Welch in the *Bulletin of the Johns Hopkins Hospital* for October, 1895. Dr. Welch's analysis of cases treated and published up to that time set at rest all doubt concerning the great reduction in mortality accomplished by this treatment, and rendered the physician culpable who denied this remedy to his patients. Sufficient experiments on lower animals and trials on human beings had already been recorded to warrant the belief that we should soon possess an effectual weapon against tetanus. Attempts had been made to treat typhoid-fever patients with serum obtained from dogs rendered immune and from convalescents, but as yet the observations were too few to warrant a more extended discussion of serum therapy in this class of cases.

Dr. Babcock then traced the efforts that had been made to combat tuberculosis by means of serum therapy, telling of the first discovery that certain animals possessed comparative immunity from the disease. Detailing several experiments, he said a more intelligent use of tuberculin seemed to show that the early failures had been due not solely to the inefficacy of the remedy, but to its injudicious employment in too large doses. He next spoke of the case of a young woman whose sister had died of pulmonary tuberculosis, and in whom well-marked signs of inactive disease existed in the right apex. The administration of antiphthisin for two months had been followed by a gratifying disappearance of the malaise, nervousness, and occasional slight cough. He had also treated a man with satisfactory results.

Dr. von Ruck had furnished him with advance sheets of a report, soon to be published, of 182 cases of consumption in all stages treated with tuberculocidin and antiphthisin, in which recovery had been obtained in thirty-two per cent. of the cases, arrest or marked improvement in thirty per cent., and some improvement in sixteen per cent.

In closing, he said that this field was broad and would repay painstaking investigation.

Special Education as a Means of Treatment in Chronic Neurasthenia.—This paper was read by Dr. J. F. Percy, of Galesburg, Ill. Neurasthenia was considered to be the result of an imperfectly used and therefore improperly developed nerve organization. His treatment was to take patients out of and away from themselves, so to speak, and he knew of no better way of doing this than to educate them as to the real facts back of their morbid tendencies. In his city there was an ably conducted kindergarten normal school, and when he had a neurasthenic woman he sent her, if possible, to this school to take the normal course there. The result had been that every one so treated had recovered. Moreover, he believed he had lifted the life of his patient to a higher level of thought and action. In one case the right ovary had been buried in a mass of exudate beneath the uterus. Electricity, and especially pelvic massage, was practised for over a year with but little appreciable result. He stopped all treatment and insisted that the woman take a kindergarten normal course, which she did, and the result was that to-day she was well, so far as the mental phenomena were concerned. The course of instruction should be carried out by competent teachers, setting at rest the nervous system, so far as concerned receiving and being influenced by morbid impressions. The teaching should be suggestive rather than direct. It was necessary to classify the patients and instruct them by degrees. This plan, which he had merely hinted at, would do more for cases of neurasthenia than anything else of which he was cognizant.

Cancer of the Uterus complicated by Pregnancy; Indications for Operation.—Dr. A. H. Cordier, of Kansas City, followed with a paper thus entitled. He reported a successful case of vaginal hysterectomy in a woman, thirty-two years of age, who was three months pregnant.

Of twenty-seven patients whose cases had been tabulated by Dr. Vander Veer, of Albany, five had died during labor, undelivered, and nine had died during the puerperal period. Another author had reported thirty-four cases of cancer of the uterus complicated by pregnancy, with a mortality of fifty-two per cent. Dr. Cordier drew the following deductions: 1. Cancer of the cervix uteri, if left without surgical interference, always kills. 2. The disease in most instances is primarily a local process. 3. Early hysterectomy will cure

quite a percentage of these cases. 4. The microscope, while a great diagnostic aid, is not infallible in its findings. 5. The experienced surgeon is warranted in resorting to hysterectomy, even in doubtful cases. 6. Every malignant gravid uterus should be removed before the disease has advanced beyond the period of a probable cure.

Dr. Ryan, of Galesburg, cited an uncomplicated case of cancer of the cervix which had occurred in the hands of another practitioner, in which the cervix had been amputated when the patient was four months advanced in pregnancy. She had gone on to full term and been delivered without difficulty.

Dr. L. H. Dunning, of Indianapolis, said that if he should find hardening of the cervix and the development of a neoplasm with the presence of discharges, sanguineous or offensive in character, even though the microscope failed to reveal positively the existence of malignant disease, he should be inclined to pursue the course recommended by the reader. As to the advisability of removing the cervix alone, it might be done if the surgeon was certain that the epitheliomatous variety existed; yet the woman's life was in peril after the neoplasm was removed, because of the scar tissue which remained. A case corroborative of this point was cited.

Dr. Rufus B. Hall, of Cincinnati, thought the whole matter hinged upon the diagnosis. When the diagnosis was accurately made, it was perfectly clear what should be done. He favored total extirpation, believing that high amputation should be done only in exceptional cases.

Dr. D. C. Brockman, of Ottumwa, Iowa, emphasized the importance of early diagnosis. He believed the fault in these cases lay largely with the general practitioner, who did not understand the importance of irregular hæmorrhages occurring in women approaching the menopause, and who prescribed a placebo at a time when a radical operation was needed.

Dr. Byron Robinson, of Chicago, concurred with the reader that the microscope alone was insufficient in many cases to enable the surgeon to make an accurate diagnosis of malignant disease of the cervix, and that more stress should be laid upon the clinical history of the case.

Diffuse Pelvic Inflammation.—This was the title of a paper contributed by Dr. L. H. Dunning, of Indianapolis. Five cases were reported in which vaginal hysterectomy had been resorted to for inflammatory disease of the uterus and its appendages, after which the author summarized as follows: 1. In all his cases, except one, the uterus, on removal, was not found to be decidedly diseased beyond a glandular endometritis. 2. In the two cases in which the uterus and appendages had been fixed the operation had been most difficult. The uterus in each case was little diseased. The chief pathological lesions were double pyosalpinx and pelvic peritonitis. The operation would have been easy and the results quite as good by the abdominal method. 3. In these cases the appendages were much more inaccessible and less open to ocular inspection than in the abdominal operation. 4. In his experience, in clamp cases the pain after vaginal hysterectomy was greater for the first two days than after laparotomy. 5. The systemic disturbances, as shown by the temperature and pulse-rate, did not vary much in the two methods. The temperature after vaginal hysterectomy was lower for the first three or four days, but higher after from six to ten days. 6. In two cases in which ligatures had been employed instead of clamps, abscesses in the stumps of the broad ligament had followed, retarding the recovery. Many abdominal sections had been done in the hospital during the same time, and in none of the cases had abscess appeared. 7. In one case of the five, prolapsus of the vaginal walls had appeared in a few weeks after the patient had begun to walk around. This was a ligature case. Such a prolapsus he had never witnessed in a forceps case. 8. In three of the cases the same pain and nervousness had followed the recovery as were sometimes witnessed in cases of abdominal section. In two of the cases the pain and nervousness had passed off after several weeks, as they usually did after abdominal section.

Dr. Rufus B. Hall said that young men should be educated to avoid gonorrhœa, in order to prevent infecting their wives in future years. This being accomplished, gynæcologists would have fewer diseased tubes and ovaries to remove.

Dr. T. J. Watkins, of Chicago, believed there were cases in which vaginal incision and drainage should be employed, while there were others in which the abdominal route was preferable. All large collections of pus in the pelvis that could be opened and efficiently drained without opening the peritoneal cavity should be treated by incision and drainage through the vagina or above Poupart's ligament. Vaginal hysterectomy should be the operation of election in old backward displacements where the uterine appendages are destroyed by suppurative disease.

Dysuria in Women.—Dr. O. B. Will, of Peoria, read a paper on this subject. Acting upon the assumption of the zymotic origin of the trouble, his first thought was to neutralize the fermentative action taking place in the lower sections of the digestive tract. For this purpose he had used with great success charcoal and sulphocarbolate of sodium, the former administered in tablet form, five grains or more at a time and frequently repeated; the latter, in half-drachm or larger doses, three times a day, before meals. As to the local treatment, years ago he had used with success in these cases of irritable bladder and urethra a strong solution of nitrate of silver, injected into the organ, the resulting pain being held in abeyance by the use of large doses of morphine. Coupled with this, forcible dilatation of the urethra for fissure had come into vogue, and in some cases seemed to answer a good purpose. Wherever a state of tissue tension existed and free drainage was desirable, the stretching process was an admirable therapeutic adjunct and preliminary to the treatment to which the author now resorted. The patient was placed in the posture advised by Kelly in exploring the bladder and catheterizing the ureters. After quickly mopping out the residual urine, if there was a hyperæmic or analogous condition of the trigonal region, he applied at once on the most dependent portion of that region, from a long-pointed syringe, a few drops of a ten- or fifteen-per-cent. solution of potassium permanganate. Before this, however, he used a ten-per-cent. solution of cocaine while dilating the urethra, and a few drops introduced into the bladder served to obtund in some measure the sensibility of its mucous lining. Where the whole tract was in an evident state of irritation, he quickly swabbed the pendent area of the bladder with cotton on a screw applicator soaked in the permanganate solution, and, making sure that there was no sharp point of the applicator exposed, with it drew the charged cotton out through the distended urethra, following in the track of the withdrawn speculum. After the application of the permanganate to the urethra it was generally advisable to introduce within a few minutes a large-sized bougie heavily coated with lanolin, especially on the end, so that the lubricant might adhere more abundantly and extensively to the urethral wall. Even in cases of dysuria associated with eczematous and urticarialike eruptions in the urethra and bladder he had recently found this treatment to be most effective.

Ulcerative Inflammation of the Cornea.—Dr. E. O. Sisson, of Keokuk, read a paper with this title. He first spoke of the ætiology, and then passed on to the subdivisions of keratitis suppurativa. Symptomatology and complications were next considered.

Pylorectomy in America was the title of a paper by Dr. A. Hugh Ferguson, of Chicago. He said the literature up to date showed only thirteen resections of the pylorus in this country, with eight deaths and five recoveries. The first successful pylorectomy in this country had been done by Dr. William T. Bull, of New York. The proportion of deaths immediately following the operation showed that shock was the most prominent cause. In none of the cases reported had the nature of the shock been stated—namely, whether it was manifested by marked cardiac inhibition, nervous depression, or excitement. The author then reported a case in which he had successfully operated. He was strongly in favor of pylorectomy for carcinoma for the following reasons: 1. Under medical treatment all the patients would die within twelve or eighteen months. 2. Pylorectomy promised a possible cure. In nineteen per cent. of over nine hundred cases of cancer of the pylorus, no adhesions whatever had been found after death; starvation had taken place before the carcinoma had reached the peritonæum. There would be good prospects of curing most of these. Recovery from the operation took place in about fifty per cent. Death occurred in 43·7 per cent. while the disease was still local, no secondary deposits or extension beyond the pylorus having taken place. Surely some of these patients could be saved. There was a still smaller mortality after an early operation. By timely interference many persons could be saved that now went on to secondary infection and were doomed. To secure the best possible results, measures must be taken to prevent shock. In addition to the hypodermic injection of strychnine before the operation, the author was convinced from a large experience in major work that when the patient was placed on a hot-water bed during the operation, shock, which otherwise would have been pronounced, was in many cases altogether prevented. He felt certain that this precaution had been a material contributing element in the success of his pylorectomy case.

After opening the abdomen, he would perform pylorectomy thus: 1. Liberate the duodenum from the pylorus, unite its distal cut end to the posterior surface of the stomach with Murphy's button, and invert the proximal cut end toward the pylorus and close with sutures. The great advantage of completing the gastroduodenostomy first was that the operation could be safely stopped at this stage. Should the patient show signs of weakening, the abdomen was at once closed and the removal of the pylorus left for a second operation. 2. Separate the stomach from the pylorus and close it rapidly with sutures. Should the patient now present alarming symptoms, the surgeon should again cease operating and leave the pylorus *in situ* in the meantime. It would, of course, be necessary to fasten it in the abdominal wound and drain it externally, which, however, would only facilitate its extirpation at another time. 3. Remove the cancerous pylorus. Spend no time in trying to use interlocking ligatures, but apply forceps after forceps and cut the mass away. This done, the ligatures could be applied more expeditiously.

Local Treatment of the Eye was the title of a paper read by Dr. Dudley S. Reynolds, of Louisville, in which he said that the local treatment of the eye was as much in need of reform and readjustment as local treatment in any other department of surgery, for there had been little change in prevailing customs for nearly a hundred years. It seemed to him that it was rational for practitioners to get out of the nitrate-of-silver path of destruction and quit furnishing the aid of cauterization to the less destructive processes of a surface inflammation. Boric acid would protect abraded surfaces against the ordinary dangers of infection; cocaine would allay local irritation; and so these might be prescribed appropriately in every case of pain in the eye from foreign bodies. Yellow oxide of mercury he considered valuable as a local application in nearly all forms of ulceration or abrasion of the cornea and conjunctiva. The tension of the eyeball must be noted in every case of injury, and, if it was found slightly increased, a solution of eserine should be instilled, a saline purgative administered, and, if the increased tension was accompanied by pain on pressure upon the globe, the use of salicylate of sodium or ammonium begun at once. Hot ablutions were often of great value in cases of irritation of the iris and ciliary body, whether due to constitutional or to local causes. In cases of contusion, and in cases of extravasation of blood from sneezing, lifting heavy bodies, or any other cause, a solution of pilocarpine hydrochloride promoted rapid absorption. It might be instilled into the eye or injected under the retrotarsal conjunctiva in doses too small to affect the heart perceptibly.

Dr. Frank Allport, of Minneapolis, had seen so many eyes that had been injured by faulty treatment that the paper had appealed to him very strongly. The longer he practised ophthalmology the more he felt the necessity of using mild and innocent remedies. He could not but believe that remedies such as the reader had indicated in his paper, that actually produced irritation of the conjunctival surface or of the epithelium of the cornea, could be other than extremely injurious in cases of acute inflammation.

Dr. William H. Wilder, of Chicago, could not agree with the reader that we should abolish the use of the stronger remedies in the treatment of diseases of the eye. They certainly had their use, and particularly in infectious cases, such as gonorrhœal ophthalmia, whether in the newborn or in the adult. The severer cases of trachoma should be handled without gloves. It was true, their treatment required skill, but there was no reason why the general practitioner should not familiarize himself with the methods necessary for the treatment of all these cases.

Observations on Some Criticisms of Serotherapy.—Dr. Paul Paquin, of St. Louis, read this paper. Nothing else in therapeutics, he said, had called forth so much criticism as serotherapy. The criticism had been of two kinds—that based on scientific problems of biology and that based on clinical effects and results. The author considered these separately at length. To show the most deleterious results of serotherapy injudiciously applied, the author had conducted experiments on animals and man and analyzed the results. In a rabbit in good health the number of red blood-corpuscles to the cubic millimetre was 5,800,000. He injected 4 c. c. of pure horse serum "immunized," and three hours later the red blood-corpuscles were counted again, and they had dropped to an average of 3,900,000, a loss of 1,100,000. Eight hours later 3 c. c. more of pure serum of another horse were injected, and within four hours the red blood-corpuscles had been reduced to practically 2,800,000, or 3,000,000 fewer than before any injection. At the same time the leucocytes had increased in large numbers. Practically the same results were obtained in a man. The number of red blood-corpuscles averaged 4,400,000 before injecting pure horse-blood serum. Ten c. c. were injected in one dose. The patient had never received it before. Four hours later the red blood-corpuscles averaged 3,800,000. Six hours later they averaged

3,000,000. Again, in this instance the white cells were enormously increased in number. In the experiments, both on man and on animals, in which the blood cells were diminished largely in number, the temperature declined slowly below normal, and there were pronounced symptoms of depression.

A phase of criticism was based on the idea that in using serum some fatal or at least dangerous animal diseases, such as glanders and tuberculosis, might be transmitted to man. This was well founded. Glanders had been thus transmitted, if we were to believe the reports of the press, but this danger could be entirely avoided. As to the beneficial effects of serum, these depended unquestionably in a great measure upon increased phagocytosis. The serum increased the white cells, whose duty it was in part to destroy micro-organisms in tissues and their toxines, probably by a process of cellular digestion, or rather a diastatic neutralization. In a tuberculous man of thirty-five years, in whom the white cells had been fewer than 16,500, they had been increased to over 40,000 in seventeen days by the daily injection of two cubic centimetres of antitubercle serum. The author had obtained a similar result in a rabbit into which he had injected Roux's antitubercle serum daily for three days, in doses of one cubic centimetre, also with other serums in other small animals.

The Relations which should exist between Oculists and Opticians.—Dr. Frank Allport, of Minneapolis, read a paper in which he advanced strong arguments in favor of licensing opticians to fit glasses. The fitting of glasses was not a trivial affair, but required in many instances a thorough examination of the eyes by a properly equipped, specially trained medical practitioner.

Dr. Dudley S. Reynolds said it frequently happened that a neurotic person consulted the ophthalmic surgeon with two or three or perhaps half a dozen pairs of spectacles in his possession, and, on suspending the accommodating power of the eye and testing the state of refraction, it was found that no glasses were needed.

Dr. Ryan said that every practitioner who did more or less ophthalmic work had seen evidences of the injury done by traveling opticians and spectacle venders. Every general practitioner should look at the eye, not as a machine, but as an organ which performs a general physiological function.

Dr. R. Harvey Reed, of Columbus, said that legal measures would soon be enacted in Ohio to prevent the optician from encroaching upon the field of the ophthalmologist. The instrument makers would also be included if the bill became a law.

The Operative Treatment of Jacksonian and Focal Epilepsy, as Illustrated by Selected Cases.—Dr. Charles B. Nancrede, of Ann Arbor, read this paper. The cases reported by him demonstrated what had been the experience of Horsley, Keen, and other surgeons—namely, lack of permanency in results. The great difficulty was the lack of a reliable method of preventing adhesions. The removal of the lesion in cortical and Jacksonian epilepsy could only be regarded as palliative. The earlier the operation was done after the disease had become established, the longer the immunity. It was possible that, if trephining was resorted to early, the operation in a few instances might prove curative, if a reliable method was devised to lessen the inevitable scar and to prevent adhesions between the membranes and the brain. The operation was not dangerous in competent hands, especially when performed early.

The Public Address, entitled Some Needed Reforms in Medicine, was delivered (by invitation) by Dr. Joseph M. Mathews, of Louisville. He first dealt with specialism, according all honor to the specialist. Professors in medical colleges should teach students that the great object in medicine was to practise it; and yet we found blooming into special lines of work every day all over the Union, both in the cities and in the country, young men, without any special preparation either for surgery or for any other particular line of medical work, setting themselves up as learned men in special departments. The profession should call a halt. It should be impressed upon the minds of students that thorough preparation was necessary in order to be a specialist, and that unless this was done specialism would be brought into disrepute. No man could be a specialist in any department who had not fitted himself by experience in general practice.

Reform was needed in the appointment of medical men to fill places in medical institutions, such as asylums, etc. Too often petitions were circulated and signed in favor of this and that man, without taking into consideration his professional qualifications.

Expert testimony should be raised to a higher plane, and those who testified as experts should receive adequate compensation.

In the State of Kentucky there were four thousand registered practising physicians. Of this number, about four hundred belonged to the State medical society. Dr. Mathews believed that this small membership obtained proportionately in other States. The live, busy, energetic, and most eminent practitioners attended medical societies.

The old rule that had applied to consultations did not hold good to-day. Specialism had not been known until recent times. There had been a change in the order of things, and practitioners of medicine had to meet the issue just as it was. To-day a patient belonged either to the physician or to the specialist, and not to both alike. When a specialist recognized that a patient did not require his special attention, he should call a physician. *Per contra*, when a physician recognized that a patient needed special attention, he should give the patient to the specialist.

Dr. Mathews then strongly condemned the indorsement by medical men of preparations of the composition of which they knew comparatively nothing. A reform was absolutely indispensable in this regard.

The code of ethics needed no defense from him, as it stood open to the world. He did not believe there was a man or woman in the profession who could raise any objection to what was taught in it. The perfect gentleman, however, in his professional relations could control his actions without the code, and act with honesty toward his fellow-men; at the same time, there was nothing in the code to which honorable men could object.

The State Board of Health of Kentucky had succeeded in driving out of the State within the last two years over eight hundred and sixty charlatans. How had this been accomplished? By the concerted action of the medical profession and the representatives in the State Legislature. Dr. Mathews then paid an eloquent tribute to the good work that had been done by the Illinois State Board of Health.

Some Practical Reasons for Early Operation in Appendicitis.—Dr. R. Harvey Reed, of Columbus, contributed a paper thus entitled. In an article on The Surgical Treatment of Chronic Catarrhal Appendicitis read by him before the Ohio State Medical Society in June, 1891, he had referred to some practical points connected with the vermiform appendix, and he would now emphasize them as follows: 1. The appendix vermiformis is a useless rudiment. 2. Chronic catarrhal appendicitis is always dangerous and apt to be followed at any time by hazardous and even fatal results. 3

Medical treatment is of little or no permanent value in this class of cases. 4. The only safe and reliable method of treating chronic catarrhal appendicitis, and the only treatment that will promise permanent relief to the patient, is the prompt amputation of the appendix. It was his experience that delay increased the mortality record in these operations. Cases were then reported illustrating the importance of early operative interference, and the arguments of eminent surgeons advanced in its favor.

Observations in the Treatment of Surgical Tuberculosis.—In a paper with this title, Dr. D. C. Brockman, of Ottumwa, Ia., called attention to three remedies to be used in the treatment of tuberculosis—guaiacol internally and iodine trichloride and iodoform emulsion locally. While he did not believe guaiacol was a specific in tuberculosis, he thought its judicious use would prove efficient against the septic condition which accompanied this disease. He next called attention to iodine trichloride in vesical tuberculosis. In the management of tuberculous abscesses no treatment could compare with the use of iodoform emulsion.

The Treatment of Pneumonia without Drugs.—Dr. Elmer Lee, of Chicago, read a paper in which he said that the principle which had guided him in his experiments in the treatment of pneumonia was based upon a conclusion reached some years ago, that the maintenance of the strength of the patient was the first requirement in the successful treatment of an acute disease. To preserve the resistance of the system against disease required an understanding of two simple propositions: First, how to support the embarrassed nutrition, and, secondly, the proper force by which to aid in the removal of deleterious matter from the body. Following upon these two general principles we had confronting us fever to subdue, arterial pressure to overcome, congestion to remove, and oxygen to provide for preserving the blood.

He had recently used a sprinkle bath, which he illustrated. A fountain syringe containing water of a temperature below the normal heat of the body was hung on the wall, the chandelier, or the bedpost, and by means of a small sprinkler-nozzle fitted to the end of the tubing the patient was watered like a bed of flowers. First, the patient was placed upon a blanket or a rubber sheet and the front of the body sprinkled; then he was turned upon his face and the shower bath completed. Sprinkle baths should be given every two or three hours during the day. Irrigation of the bowels constituted the use of water in its third remedial capacity. The value of the irrigation was rated by the author, as to importance, as follows: 1. Water introduced into the system through the mouth. 2. Water introduced into the large bowel as in irrigation. 3. Water used upon the surface of the body. The use of water by the mouth, as a remedy, was accompanied with extremely small doses of medicine to meet the expectations of the patient and the members of the family. Pneumonia patients treated by scientific hydriatic measures were convalescent at the end of the first week. Complete recovery was proportionately shortened. It was the author's belief that this method of treatment was the quickest, surest, and best in pneumonia. This plan was only an outline of the general system of treating pneumonia by hydriatics; each case must be managed and directed upon its individual merits.

Conservative Surgery in the Treatment of Hæmorrhoids was the subject of a paper by Dr. Joseph B. Bacon, of Chicago. He had found in looking over his records that but a very small percentage of his operative cases had been of purely internal or purely external hæmorrhoids. Patients that were suffering or bleeding sufficiently to cause them to seek medical advice were those that had a mixed form of piles, where the anastomosing vessels connecting the external and internal hæmorrhoidal veins had become varicosed, and these dilated veins pressed upon the sensory nerve filaments over the inner border of the external sphincter muscle, causing pain and prolapse of the internal hæmorrhoids. A segment of the varicose system of veins must be removed; one segment on each side of the anus was sufficient. If the larger tumors were removed, one at least on each side, the varicose system of veins was broken and the remaining varicosities were absorbed and disappeared. If one removed those hæmorrhoids that were causing the discomfort, together with the external or skin tags, the patient was cured, and only a small surface of either skin or mucous membrane had been disturbed. The ligature, clamp and cautery, or crushing method, according to the choice of the surgeon, would answer the purpose. After the patient was convalescent, he should be taught the causes of his previous trouble and how to avoid congestion of the portal circulation or overstraining of the general vascular system. This method gave the best results, and if adopted generally would tend to restore the confidence of a much-abused class of patients and give the general public greater respect for the science of surgery.

Leucocytosis—Its Relation to Modern Therapy was the subject of a paper by Dr. Thomas O. Summers, of St. Louis.

Book Notices.

Diphtheria and its Associates. By Lennox Browne, F. R. C. S. Ed., Senior Surgeon to the Central London Throat, Nose, and Ear Hospital, etc. Illustrated by the Author. London: Bailliere, Tindall, & Cox. Philadelphia: J. B. Lippincott Company, 1896. Pp. xii–272. [Price, $5.]

The study of diphtheria has of recent years occupied a vast amount of attention, with the result that what was formerly a disease or, more properly, a group of diseases about which we were ill informed and relatively in the dark has become all but completely elucidated, even to the provision of a remedy which is perhaps entitled to the name specific. The more striking of these discoveries are recorded in many a text-book, and one would regard a work as highly old-fashioned which should speak of diphtheria without the inclusion of more or less matter concerning the Klebs-Loeffler bacillus and the diphtheritic antitoxine. There are many things diphtheritic, however, which are of the utmost importance for us to know, that can not be ascertained save by reference to widely scattered medical publications, mainly of the periodical variety. The time is eminently suitable, therefore, for the appearance of a work which exclusively, exhaustively, and authoritatively sets forth the present state of our knowledge of the diseases known as diphtheritic. Such a work we now have in *Diphtheria and its Associates.*

The work is exhaustive, not in the redundant sense, but as synonymous with ample and sufficient. It neglects nothing that should be known of diphtheria and kindred diseases, and, moreover, the very excellent form, both of composition and of publication, in which the work appears adds greatly to its value and usefulness. The illustrations, too, are numerous, excellently drawn, and generally well executed.

The opening chapter deals with definitions, and in it are proposed names which are both simple and descriptive. Simple bacillary diphtheria is diphtheria in which the specific organism alone is present. Complex or cocco-bacillary diph-

theria is diphtheria in which cocci are present in addition to the specific bacillus. Non-bacillary diphtheria is a pseudo-membranous inflammation from which the bacillus of diphtheria is absent. Non-virulent bacillary diphtheria is that curious form in which a bacillus is present which in every way seems the same as the Klebs-Loeffler bacillus, save in the possession of virulent qualities. This nomenclature certainly has advantages, not the least of which is the avoidance of the term pseudo-diphtheria, or false diphtheria, as descriptive of either of the last two sets of cases. A brief historical chapter follows.

The ætiology of diphtheritic disease is well and carefully presented, and it is evident that the author has been at great pains to accumulate evidence whereon to found his conclusions. The chapters on ætiology include much that is pathological, and when we come to the chapter headed "pathology" we find that the bacillus and its kin have already occupied all the space allowed them. The chapter on pathology, however, though short, is sufficient. It deals with the histology of the false membrane and the other changes which may affect the body in diphtheria. A chapter concerning bacteriological diagnosis comes next. It presents what is generally known of the diagnosis of diphtheria by microscopic examination, cultures, and inoculation. A number of chapters treat of clinical diagnosis, of illustrative cases, and of the elements of prognosis. They are indeed most excellent. The colored plates which accompany the histories cited are wonderfully good and contribute much to the value of the descriptions. It is a little curious to us, however, that the author should lay so much stress upon a clinical diagnosis, in contradistinction to one bacteriological, especially in view of his rather exact and finely divided classifications. No doubt one may often say at once that a case is or is not truly diphtheritic, but he gains little by so doing, for if the case is pseudo-membranous he certainly will not neglect a bacteriological examination, and surely one will scarcely venture to announce, after looking at a throat that is the seat of pseudo-membranous inflammation and considering the entire symptomatology, that the case will yield a pure culture of the Klebs-Loeffler bacillus. No doubt clinical diagnosis in diphtheritic conditions, as in others, is capable of elaboration to great accuracy, but, if our classification is determined by the presence or absence of a micro-organism, clinical diagnosis may be superfluous.

The author objects to the diagnosis of laryngeal diphtheria on such evidence as stridor or metallic cough, even when pseudo-membrane is present in the fauces. In this he is certainly right, and doubtless also in saying that the symptoms mentioned are often due to simple catarrhal laryngitis or to muscular spasm. The use of the laryngeal mirror in such cases is often difficult, it is true, but, since so much depends upon it, the mirror should be employed oftener than it is.

The chapter on treatment gives the usual conservative medication long employed. That lactic acid should be the author's choice for a local application is, we confess, a surprise to us, but not more so than his disposition to remove the false membrane forcibly. An excellent chapter on laryngo-tracheal diphtheria and croup follows and includes a consideration of intubation. With a chapter on hygiene and prophylaxis and one on remedial formulæ the book proper ends.

An appendix contains a full and thorough presentation and consideration of the serum treatment of diphtheria. The reason for its not being embodied in the main part is the author's belief that its value is as yet *sub judice*. The chapter is an able one and well presents this important matter; the position of the author is judicial, and he is neither an opponent nor a partisan of the serum treatment. Conservatism would seem to describe his position rather than any other word.

Contribution à l'étude de l'atrophie musculaire progressive. Type Duchenne-Aran. Par le Dr. J. B. Charcot, ancien interne des hôpitaux. Paris: Félix Alcan, 1895. Publications du *Progrès médical*. Pp. 159.

This is a study of the Duchenne-Aran type of progressive muscular atrophy, made by the son of the distinguished Charcot. He announces in his introduction that it is written for the purpose of clearing up some of the obscure points in the disease, and to prove that both from a clinical and from an anatomical point of view its autonomy is justified. It consists of a report of a number of cases, very thoroughly written, with photographs of some of the patients, and with some good pathological studies of the conditions found at autopsy. Several pages of exceedingly good lithographs of sections of the spinal cord in this disease are appended to the book. It is a valuable clinico-pathological study and should be in the library of every one interested in chronic spinal-cord diseases.

The Growth of the Brain. A Study of the Nervous System in Relation to Education. By Henry Herbert Donaldson, Professor of Neurology in the University of Chicago. London: Walter Scott, Limited, 1895. Pp. 6 to 374.

There is a vast amount of material collected in Dr. Donaldson's book, as will be seen from the following *résumé* of its chief contents: The first three chapters are devoted to the growth of the body in general; the three following chapters are upon the weight of the brain and spinal cord, increase of brain weight, and variations in brain weight. Then follow seven chapters upon the histology of the nervous system, the development of nerve elements, the architecture of the brain, and localization of function. After this there are chapters on physiological changes in the central nervous system, physiological rhythms, fatigue, old age, and the education of the nervous system. The book should prove valuable not only to the physician, but also to the parent and teacher, for it was written with the purpose in view of being useful to all three classes of readers.

Some Physiological Factors of the Neuroses of Childhood. By B. K. Rachford, M. D., Professor of Physiology and Clinician to the Children's Clinic, Medical College of Ohio. Cincinnati: The Robert Clarke Company, 1895. Pp. viii–122. [Price, $1.]

This little book has nine chapters devoted to the normal function of cells, the physiological peculiarities of the nervous system in infancy and childhood, fever, the variable temperatures of childhood, the heat-dissipating mechanism, the toxines, venous blood, impoverished blood, reflex irritation, and excessive nerve activity. Thus the brochure is rather devoted to physiological explanations of the development of the neuroses of childhood than to any particular discussion of the neuroses themselves. It is a book which is very well written from a broad biological standpoint, and it well deserves the careful attention of all physicians who have to do with the nervous conditions of childhood.

Uric Acid as a Factor in the Causation of Disease. A Contribution to the Pathology of High Arterial Tension, Headache, Epilepsy, Mental Depression, Paroxysmal Hæmoglobinuria and Anæmia, Bright's Disease, Diabetes, Gout, Rheumatism, and other Disorders. By Alexander Haig

M. A., M. D. Oxon., F. R. C. P., Physician to the Metropolitan Hospital and the Royal Hospital for Children and Women, etc. Third Edition. With Fifty-four Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1896. Pp. xv–600. [Price, $3.]

Although some additions have been made to the text in this edition of Dr. Haig's work, notably in relation to fatigue, menstruation, and temperature, the general character of the book remains unchanged. What this character is seems now to be generally known, and, though many things in the author's uric-acid theories need further observation and further confirmation before they can be accepted as facts, his experiments and teachings have been productive of the greatest amount of good. To Englishmen and Americans, in particular, the subject is one of the greatest importance, for they are the meat-eaters of the world and manifest more than other peoples the ailments and diseases that are attributable to uric acid. That the connection between excessive nitrogenous ingesta and certain well-defined morbid conditions is a close one must have struck all medical observers, and, though the uric-acid theory in many of its details is still not to our satisfaction, it must be said that our insight into the subject has been far deeper since we became acquainted with the experiences and the teachings of Dr. Haig, and we gladly express the gratitude we owe him for having aroused our interest and our study of a matter so far reaching in its importance.

Although the question of uric acid as a pathological factor has now for some years been exciting far more widespread interest than formerly, the interest still remains insufficient, for medicine contains no problem so important unless it is that of tuberculosis. Those who already know Dr. Haig's book will need no advice that they continue to study his writings; to those who are ignorant of his teachings we would as earnestly as possible represent their importance.

Handbook for the Bio-chemical Laboratory. Including Methods of Preparation and Numerous Tests arranged Alphabetically. By John A. Mandel, Assistant to the Chair of Chemistry, etc., at the Bellevue Hospital Medical College and the College of the City of New York, etc. First Edition. First Thousand. New York: John Wiley & Sons. London: Chapman & Hall, Limited, 1896. Pp. 101. [Price, $1.50.]

This little book is not remarkable for its originality, and no allegation to the contrary is made for it by the author, since it is a compilation pure and simple; but it is remarkable for the concise and lucid presentation of the facts with which it deals. To describe the object and scope of the book we can do no better than to quote the preface entire: "In this little handbook an attempt has been made to give concise directions for preparing the most important substances that enter into the composition of the fluids and tissues of the animal body. The methods herein presented are compiled from the most recent and important works on physiological chemistry; and in certain instances two or three procedures are given for obtaining the same result. The two hundred or more tests are arranged in alphabetical order; and the name of the scientist who suggested the test, or the name under which it is ordinarily known, is given in each case. My most earnest desire in compiling this handbook has been both to facilitate general work in bio-chemical laboratories and to afford the student an opportunity to have conveniently at hand all the necessary facts in modern scientific testing, so that loss of time in consulting works of reference might be reduced to a minimum."

Professor Mandel has well succeeded in his undertaking, and as a result of his labors we have a convenient little book which can hardly fail to attain its object.

New Truths in Ophthalmology, as Developed by G. C. Savage, M. D., Professor of Ophthalmology in the Medical Department of the Vanderbilt University, etc. Fifty-eight Illustrations. Third Edition. Published by the Author, 1896. Pp. viii–270.

Every well-directed effort to unravel that most difficult of all questions in ophthalmology, the analysis and treatment of muscular anomalies, should be heartily welcomed, but, with the intensely practical tendency of our race, we are in danger of making haste too quickly. In other words, the author's conclusions, although sometimes clinically plausible, are for the most part unsupported by such evidence as would command the respect of the more cautious members of the profession either here or abroad.

BOOKS, ETC., RECEIVED.

The International Medical Annual and Practitioner's Index. A Work of Reference for Medical Practitioners. By Various Contributors. Fourteenth Year. New York and Chicago: E. B. Treat, 1896. Pp. 728. [Price, $2.75.]

Water Supply. Considered Principally from a Sanitary Standpoint. By William P. Mason, Professor of Chemistry, Rensselaer Polytechnic Institute, etc. First Edition. First Thousand. New York: John Wiley & Sons. London: Chapman & Hall, Limited, 1896. Pp. vii–504.

The Primary Factors of Organic Evolution. By E. D. Cope, Ph. D., Professor of Zoology and Comparative Anatomy in the University of Pennsylvania. Chicago: The Open Court Publishing Company, 1896. Pp. xvi–547. [Price, $2.]

The Non-heredity of Inebriety. By Leslie E. Keeley, M. D., LL. D. Chicago: S. C. Griggs & Co., 1896. Pp. 3 to 359.

The Psychology of Attention. By Th. Ribot, Professor of Comparative and Experimental Psychology in the Collége de France. Authorized Translation. Third Revised Edition. Chicago: The Open Court Publishing Company, 1896. Pp. viii–120. [Price, 75 cents.]

Fear. By Angelo Mosso. Translated from the Fifth Edition of the Italian by E. Lough and F. Kiesow. Authorized Translation. London, New York, and Bombay: Longmans, Green, & Co., 1896. Pp. 278.

Medical and Surgical Report of the Presbyterian Hospital in the City of New York. Volume I. January, 1896.

A Handbook on Leprosy. By S. P. Impey, M. D., M. C., Late Chief and Medical Superintendent, Robben Island Leper and Lunatic Asylums, Cape Colony, Africa. Philadelphia: P. Blakiston, Son, & Co., 1896. Pp. xv–116. [Price, $3.50.]

Notes on Drug Eruptions. By John A. Fordyce, M. D. [Reprinted from the *Journal of Cutaneous and Genito-urinary Diseases.*]

Raynaud's Disease of the Ears—Angeiokeratoma of the Scrotum—Lupus Erythematosus Disseminatus disappearing during Pregnancy. By John A. Fordyce, M. D. [Reprinted from the *Journal of Cutaneous and Genito-urinary Diseases.*]

Indio. The Colorado Desert for Health. By Walter Lindley, M. D. [Reprinted from the *Medical Record.*]

Evisceration of the Eyeball. By L. Webster Fox, M. D. [Reprinted from the *Medical Bulletin.*]

Episcleritis and its Treatment. By A. C. Veasey, M. D., Philadelphia. [Reprinted from the *Therapeutic Gazette.*]

A Case of Duboisine Poisoning. By A. C. Veasey, M. D. [Reprinted from the *Philadelphia Polyclinic.*]

Sarcoma of the Chorioid, Glioma of the Retina, and New-formed Blood-vessels in the Vitreous. By L. Webster Fox, M. D. [Reprinted from the *Ophthalmic Record.*]

A Knife Protector. By A. C. Veasey, M. D. [Reprinted from the *Journal of the American Medical Association.*]

Should Medical Registration Laws Cover the Science of Ophthalmology? By F. M. Harrington, M. D. [Reprinted from the *American Medico-surgical Bulletin.*]

A Small but Useful Combination of Medicines for Vest Pocket and Office Use. By D. W. Cathell, M. D., Baltimore. [Reprinted from the *Maryland Medical Journal.*]

Mixed Forms of Trachoma and Spring Catarrh. By Charles H. May, M. D. [Reprinted from the *Annals of Ophthalmology and Otology.*]

Studies from the Yale Psychological Laboratory. Edited by Edward W. Scripture, Ph. D., Instructor in Experimental Psychology. Volume III. 1895.

Miscellany.

The American Laryngological, Rhinological, and Otological Society.—The second annual meeting was held in New York, on April 17th and 18th, under the presidency of Dr. Edward B. Dench, of New York. Besides the president's address, the programme included the following papers: The Diagnostic Value of Ophthalmoscopic Examination in Cerebral Disease depending upon Affections of the Ear, by Dr. Thomas R. Pooley, of New York (discussed by Dr. D. B. St. John Roosa and Dr. J. Herbert Clairborne, of New York); A Contribution to the Study of Laryngeal Vertigo, by Dr. A. C. Getchell, of Worcester, Mass.; A Report and Exhibition of a Case of Unusual Speech Defect, by Dr. G. Hudson Makuen, of Philadelphia; Practical Experience with Autoscopy of the Larynx and of the Trachea, by Dr. M. Thorner, of Cincinnati; Otitis Media Suppurativa, with an Unusual Perforation of the Mastoid, by Dr. E. E. Holt, of Portland, Me.; Cancer of the Tonsil and of the Tongue, with a Report of Four Cases, by Dr. T. C. Evans, of Louisville; A Report of a Case of Hæmorrhage from the External Auditory Canal, by Dr. C. W. Richardson, of Washington; Chronic Suppurative Inflammation of the Tympanic Cavity, by Dr. S. MacCuen Smith, of Philadelphia; The Ætiology, Symptoms, and Treatment of Rhinoliths, with a Report of a Case, by Dr. William Scheppegrell, of New Orleans; A Case of Rhino-pharyngeal Fibroma with Projections extending to the Orifice of both Anterior Nares, by Dr. Hanau W. Loeb, of St. Louis; Pharyngeal Tuberculosis, by Dr. Robert Levy, of Denver; Diphtheria of the Nasopharynx, by Dr. Walter J. Freeman, of Philadelphia; A Report of Cases, by Dr. J. E. Schadle, of St. Paul; Pharyngeal and Laryngeal Neuroses, by Dr. James E. Logan, of Kansas City; The Surgical Anatomy of the Mastoid, by Dr. G. E. Brewer, of New York; A Study of Three Hundred Cases of Ear Diseases, by Dr. Wendell C. Phillips, of New York; When Adenoids and Polypi are the Chief Causes of Bronchial Asthma and Hay Fever, by Dr. Arthur G. Hobbs, of Atlanta; Otitis Media Catarrhalis Chronica, with a Report of a New Instrument to Facilitate the Treatment, by Dr. Joseph E. Willetts, of Pittsburgh; A Contribution to the Study of the Diseases of the Accessory Nasal Sinuses, by Dr. John R. Winslow, of Baltimore; The Diseases and Treatment of the Nasal Accessory Sinuses, with an Analytical Report, by Dr. Robert C. Myles, of New York; A Case of Angeioneurotic Œdema of the Larynx, with Remarks, by Dr. Dunbar Roy, of Atlanta; Œdema of the Larynx, by Dr. O. B. Douglas, of New York; Acute Otitis Media as a Complication of Typhoid Fever, by Dr. D. A. Hengst, of Pittsburgh; The Mastoid and Intracranial Complications of Middle-ear Suppuration, by Dr. E. B. Dench; and a Report of a Case, by Dr. Howard S. Straight, of Cleveland.

The Subcutaneous Use of Iodine and Iron in Grave Anæmia.—According to the *Wiener medicinische Presse* (quoted in the *Deutsche Medizinal-Zeitung* for March 30th), Dr. Meuella, of Rome, uses the following formulas:

℞ Pure iodine ..... 3 grains;
Potassium iodide, enough to make it dissolve in distilled water... 300 grains.
Sig.: For subcutaneous injection.

℞ Iron and ammonium citrate..... 15 grains;
Distilled water..... 300 "
Sig.: For subcutaneous injection.

A Pravaz-syringeful of the first solution is injected into one buttock, and at the same sitting a like quantity of the second solution is injected into the other buttock. The injections may be given daily or twice a day. The remedial effect is said to be very prompt.

The Vivisection Question.—In order to obtain an accurate idea of the prevalence of various opinions on this question, the American Humane Association, through a committee appointed for the purpose, has caused four different statements to be sent out for consideration to the leading clergymen, college presidents, professors, medical teachers, editors, etc., in the United States and to every physician in the States of New York and Massachusetts who had been in practice for fifteen years. The statements were as follows:

1. For the Total Prohibition of Vivisection.—"Whether any useful knowledge can thus be acquired or not is beside the question. Even if utility could be proved, man has no moral right to attempt to benefit himself at the cost of injury, pain, or disease to the lower animals. *The injury which the practice of vivisection causes to the moral sense of the individual and to humanity far outweighs any possible benefit that could be derived from it.* Dr. Henry J. Bigelow, professor in the Medical School of Harvard University, declared that '*Vivisection deadens the humanity of the students.*' Nothing which thus lowers morality can be a necessity to progress. . . . Painless or painful, useless or useful, however severe or however slight, vivisection is therefore a practice so linked with cruelty, and so pernicious in tendency, that any reform is impossible, and it should be absolutely prohibited by law for any purpose." To this statement 464 signatures were sent, of which 216 were from members of the medical profession.

2. Vivisection Allowable if without Pain.—"Whether that experimentation upon living animals known as vivisection is justifiable or not, depends, in our judgment, *exclusively on the question of pain.* . . . The use of chloroform and ether has made it possible to perform certain experiments and demonstrations upon living animals without the slightest pain, and these only we regard as justifiable for demonstration or research. The dangers of this practice, however, are so many, the temptations to excess are so strong, the abuses to which it has led are so notorious and deplorable, that the decision of this question of pain should not be left to the judgment of each experimenter; but the whole practice, like the study of human anatomy with dissection, should be regulated by definite laws, confined to certain objects, permitted only to competent and trustworthy persons, and restricted to licensed places which shall be open at all times to inspection by the

presidents of humane societies for the protection of animals, or their authorized representatives." To this statement 398 signatures were affixed, of which 197 were those of physicians.

3. Vivisection Restricted by Utility.—"Vivisection is a practice of such variety and complexity that, like warfare between nations, one can neither condemn it nor approve it unless some careful distinctions be first laid down. . . . Within certain limitations we regard vivisection to be so justified by utility as to be legitimate, expedient, and right. Beyond these boundaries it is cruel, monstrous, and wrong. We consider as *wholly unjustifiable* the common practice . . . of subjecting animals to torture in the laboratory or classroom, merely for the purpose of demonstrating well-known and accepted facts. We hold that the infliction of torment upon a living animal under such circumstances is not justified by necessity, nor is it a fitting exhibition for the contemplation of youth. We believe, therefore, that the common interests of humanity and science demand that vivisection, like the study of human anatomy in the dissecting room, should be brought under the direct supervision and control of the State. The practice, whether in public or in private, should be restricted by law to certain definite objects, and surrounded by every possible safeguard against license or abuse." To this statement 891 signatures were affixed, including those of 555 members of the medical profession. By a few signers some changes in phraseology were made; but the great majority affixed their names without modifying the statement in any way.

4. Vivisection without Restrictions.—"Vivisection, or experimentation upon living creatures, must be looked at simply as a method of studying the phenomena of life. With it morality has nothing to do. It should be subject neither to criticism, supervision, nor restrictions of any kind. It may be used to any extent desired by any experimenter (no matter what degree of extreme or prolonged pain it may involve) for demonstration before students of the statements contained in their text-books, as an aid to memory; for confirmation of theories; for original research; or for any conceivable purpose of investigation into vital phenomena. We consider that sentiment has no place in the physiological laboratory; that animals have there no 'rights' which man is called upon to notice or respect." To this statement 109 signatures were affixed, including those of two presidents of leading universities. Another statement, slightly differing from this but affirming the same principles, received 172 signatures.

A New and Easy Method of Preparing Serum Agar-agar; an Aid to the Diagnosis of Diphtheria.—In the *Lancet* for March 28th Dr. A. A. Kanthack and Mr. J. W. W. Stephens have an article on this subject in which they remark that various nutrient media have been recommended from time to time for the separation of diphtheria bacilli, and of these, Löffler's serum agar-agar has generally been considered to be the best. There are, however, some difficulties, though perhaps slight, in obtaining the serum and in preparing the mixture. These are felt most in a busy laboratory insufficiently endowed with assistants. It is not always easy to procure serum without some or much loss of time. At a large general hospital there is always a copious supply of ascitic, pleuritic, or hydrocele fluids—albuminous exudations directly derived from the human blood—which are, as a rule, wasted after being measured into pints, ounces, and drachms. It seemed to them that these fluids might be used with advantage instead of serum, and they soon found a ready method of preparing from them large quantities of beautifully clear and transparent agar-agar in less than an hour, as follows:

To every 100 c. c. of the serous exudation 2 c. c. of a ten-per-cent. solution of caustic potash must be added; thereby the serum albumin is converted into an alkali albumin which is not precipitated on boiling. To this they added from 1·5 to two per cent. of agar-agar, previously soaked in acidulated water, and boiled the mixture in a Koch's steamer till the agar-agar was well dissolved. When this has happened the liquid in the flask will appear as transparent as if it had been cleared with white of egg. It must now be filtered through a hot-water funnel, and if a coarser kind of filter paper is used it will generally run through very quickly and, at the same time, be marvelously clear. To the filtrate from four to five per cent. of glycerin should be added. It may then be poured into test tubes, and the contents of the latter after sterilization will set firmly and often form a medium almost as transparent as gelatin. If the serous exudations are worked up as soon as possible after they have been received from the body the resultant agar-agar will be clear and light. Besides glycerin, from 0·5 to two per cent. of grape sugar may be added; but we have not found that this in any way improves the medium, but on the contrary the combined presence of the sugar and the caustic alkali renders the agar-agar darker.

This serum agar-agar has the following advantages: 1. It is quickly prepared with very little practice, often in about half an hour. 2. It is exceptionally clear and transparent. 3. Its basis is derived from the human subject. 4. The serous exudations can be easily obtained, free of cost and trouble. 5. It does all that serum can do. ·6. Its selective action on the diphtheria bacilli is greater than that of any other serum preparation known to us. 7. Its inhibitory action on staphylococci, *Bacillus coli communis*, etc., is indeed extraordinary. 8. Cultures, which on ordinary media appear as uniform streaks, in this medium develop as individual colonies, so that subsequent cultivation is rendered easy. 9. Organisms which utterly refuse to grow on gelatin and agar-agar thrive well on this soil, and they have therewith separated certain bacterial forms which on other media have always escaped them. 10. This medium can be readily melted and be then used for the purpose of plate cultivations; the resulting plates are more transparent and drier than ordinary agar-agar plates. The authors state that in a diphtheria diagnosis it has saved them a considerable amount of time, and now, after it has been tested for some months both in Dr. Klein's and their own laboratories, they feel that this short account may be of use to other workers.

They state that before adding the caustic potash to the serous fluid they always boil a small quantity of it in a test tube. If it becomes practically solid or contains large quantities of albumin, the fluid must be diluted with at least twice its bulk of distilled water, and then to every 100 c. c. of the diluted fluid 2 c. c. of KOH and from 17·5 to 30 grains of agar-agar are to be added. Unless this is done the whole mass will gelatinize and be utterly useless. This difficulty they did not recognize at first, because it is one which does not often arise. The serous exudation after the addition of the alkali forms also a good liquid nutrient medium for bacteria—useful because it is easily sterilized and because it favors the chemical activity of many pathogenic organisms.

The Prophylaxis and Treatment of Broncho-pneumonia and of Bronchitis in very Young Children.—In the *Presse médicale* for March 25th there is an abstract of an article by M. Marfan which appeared in the *Bulletin médical* for March 18, 1893. There is, says the author, an efficacious prophylactic treatment of broncho-pneumonia, which consists in establishing antisepsis of the nasal fossæ and of the rhinopharynx. In order to ac-

complish this, the author recommends the following solution, which should be injected once a day into each nostril with a small syringe. From five to six drops are to be used at a time:

Sweet almond oil	600 grains;
Menthol	15 "

During the rest of the day applications of the following ointment may be made in each nostril, the amount used being a piece of about the size of a pea:

Resorcin	4·5 grains;
Boric acid	45 "
Vaseline	450 "

With regard to disinfection of the mouth, the gums and the teeth should be washed with a tampon of cotton which has been saturated in a one-per-cent. solution of resorcin, a four-per-cent. solution of Labarraque's liquor, or a one-in-five-hundred solution of carbolic acid; the tonsils may also be lightly touched with the tampon. This should be done once or twice a day. If lesions of stomatitis are very pronounced, irrigations with boiled water are practised twice a day.

With regard to bronchitis and the development of secondary bronchial infection, says M. Marfan, we must combat self-infection and contagion. Generally, he says, the first indication is to establish, as far as possible, asepsis of the bronchi; the second, to facilitate expectoration; the third, to quiet the cough; and the fourth, to favor resolution.

For the intense bronchitis of nurslings the author advises the use of ipecac in very small doses, in the form of an infusion, and associated with balsamics and antispasmodics. If the fever is very intense he uses antipyrine also. If diarrhœa appears on the fourth or fifth day, all medication is stopped and boiled water is given to the child for six hours, during which time the following powder is given in capsules, one every hour:

Calomel	from 0·5 to 0·75 grain;
Sugar of milk	8 grains.

This quantity will make three capsules.

If the bronchitis spreads to the capillary bronchioles and to the lobules of the lungs—that is, if a benign infection becomes transformed into a grave one—extended and superficial revulsion should be established with mustard plasters applied frequently; if the case is a very grave one, the thorax should be covered with water compresses which favor diuresis and allay agitation. Diffusible stimulants, which are also expectorants, are doubly indicated, and alcohol should be replaced by ether and ammonium acetate, as follows:

Julep	4·50 ounces;
Syrup of ether	150 grains;
Ammonium acetate	from 8 to 30 grains.

For the common acute forms M. Marfan recommends the use of camphorated oil in the proportion of one part of camphor to ten parts of oil. Four grains of this mixture may be injected in a child of six months, eight grains in children of from one to two years, and fifteen grains after the second year. The injections should be given at intervals of two or three days. If there are symptoms of cardiac asthenia, or asphyxia, injections of caffeine should be resorted to.

In certain cases of suffocative capillary bronchitis, says the writer, M. Marfan employs very rapid and extensive revulsion by means of mustard baths given two or three times a day.

In the toxic capillary bronchitis of Hutinel and Claisse water-pack refrigeration is the only means of arresting the peculiarly grave bronchial septicæmia.

The cases of subacute broncho-pneumonia with tardy resolution and with foci presenting a certain fixity are the only ones in which it would be useful to apply a small blister.

A Special Action of the Serum of Highly Immunized Animals, and its Use for Diagnostic and other Purposes.—No. 355 of the *Proceedings of the Royal Society* contains an abstract of an article on this subject by Mr. Herbert E. Durham, communicated by Dr. Sherrington. The following conclusions, he says, are the outcome of an inquiry into the Nature of Pfeiffer's reaction, which was made at the suggestion and under the guidance of Professor Max Gruber, of Vienna. The communication deals with the effects produced upon microbes *in vitro* by the serums of highly immunized animals, even when extremely dilute. This portion of the inquiry was carried out mainly in the bacteriological laboratory of Guy's Hospital.

1. A remarkable series of effects are produced on an emulsion of actively motile microbes by the addition of minute quantities of potent kinds of serum.

2. These effects have been observed with the cholera vibrio, a variety of other vibrios, the typhoid bacillus, the *Bacillus coli communis*, and the *Bacillus pyocyaneus*.

3. It is highly improbable that the phenomena are limited to the groups and species here named. Further observation is requisite upon other motile, as well as the non-motile bacteria.

4. The most prominent of the effects thus produced consists of an immediate aggregation of the bacteria into clumps; this is combined with loss of motility. Marked inhibition of growth also occurs.

5. The formation of clumps can be detected readily by the naked eye. Eventually they gravitate to the bottom of the tube containing them.

6. A complete action is obtained when all the clumps settle down, leaving a perfectly clear fluid. The time required for settling varies somewhat with different organisms, as also according to the amount and potency of the serum used.

7. The least quantity of serum which will give a complete reaction in about one hour forms a convenient standard. A highly potent serum will react thus in one-per-cent. solution, which is a convenient unit.

8. The more intense the action of the serum, the more rapid and the more complete are the changes which ensue.

9. By means of the intensity of action in varying dilutions, two or more samples of serum, or of freshly drawn blood, may be gauged according to their potency.

10. Normal serum, and the serum obtained by immunizations with totally unrelated groups of organisms, do not interact upon the unrelated microbes, so far as present observation shows.

11. The action of cholera serum upon more or less closely related vibrios may be complete or *nil*. A series of gradations in intensity of reaction has been observed with cholera serum and vibrios of other species, and *vice versa*.

12. The action of such serum can not therefore be regarded as specific; it is better named *special* or *specialized*.

13. The limit of the absolute value of such serum tests for the diagnosis of cholera vibrios has yet to be determined.

14. All the typhoid bacilli from nineteen different sources hitherto observed react with typhoid serum; none of them react with the *Bacillus coli* serum.

15. Of the *Bacillus coli* varieties hitherto proved, some do not react with one sample of *Bacillus coli* serum.

16. The agreement in action of the typhoid bacilli points to the use of the method for diagnostic purposes. Given a

young culture and typhoid serum, a diagnosis can be made in a few minutes.

17. As shown by serum experiments, the variation within the *Bacillus coli* group is greater than that of *Bacillus typhi* races.

18. By the method described, more delicate changes can be observed than with such methods as plate cultivations, and the fallacies thereof are avoided.

19. A vibrio and a vibrio serum which will give a complete reaction *in vitro* will also give a positive result in Pfeiffer's reaction (*e. g.*, *Vibrio Iwánoffi* and *Vibrio berolinensis* with cholera serum).

20. It is not worth while performing Pfeiffer's test unless a complete reaction has been obtained *in vitro*.

21. In the method described, the whole series of changes, if any, are before the eye the whole time. In Pfeiffer's method the changes can only be seen by removing samples from their hiding place in the guinea-pig's peritoneal cavity. The extent of possible fallacy from using the peritoneal fluid of a living animal is not yet defined. Professor Pfeiffer himself admits that the animals vary to some extent according to their condition of health.

Tannalbin; a New Preparation of Tannin.—The *Deutsche medicinische Wochenschrift* for March 12th contains two articles—one by Gottlieb, of Heidelberg, and the other by von Engel, of Brünn—on a new product of Knoll & Co.'s factory called tannalbin. Abstracts of the two articles appear in the *Therapeutische Wochenschrift* for March 29th. Gottlieb describes tannalbin as a slightly yellowish, tasteless powder containing fifty per cent. of tannin, made by subjecting a compound of tannin and albumin to a heat of from 212° to 248° F. for five or six hours, whereby it acquires the property of resisting gastric digestion, while it still remains susceptible to the slow action of the intestinal juices.

Von Engel has tried it in forty cases. He reports that he has observed no harm from its use. The dose for adults is fifteen grains, and that for children under four years old half that amount, from two to four times a day. He has found it serviceable in all diarrhœal affections in which an astringent is indicated, especially chronic intestinal catarrh. It proved efficient in twenty-five out of twenty-nine subacute or chronic cases, and in nine out of ten acute ones.

Sulphate of Zinc in the Treatment of Anæmia.—The *Deutsche Medizinal-Zeitung* for March 30th contains a summary of an article by Savoca that appeared in the *Archivio di farmacologia e terapia*. It seems that Savoca has used sulphate of zinc with gratifying success in the treatment of anæmia, but, as to what doses he employed, we can form only a conjecture; the German abstract states that they were "von 1—6 cm. pro Tag!"

A Report on Antiphthisin.—In November, 1895, the Parish Medical Society of New Orleans appointed a commission for the investigation and a public test of antiphthisin, as to its value in tuberculosis, to be made in the Charity Hospital of New Orleans. The commission consisted of the following members: Dr. Edmond Souchon (president); Dr. A. J. Bloch (secretary); Dr. J. D. Bloom, house physician of Charity Hospital; Professor John Elliott; Professor R. Matas; Professor F. W. Parham; Dr. F. Loeber; Dr. Charles Chassaignac; Dr. John H. Bemis; Dr. Joseph Holt; Dr. H. L. Lewis; Dr. P. E. Archinard; Dr. O. P. Pothier; Dr. McShane; and Dr. C. J. Langfried.

The treatment of cases was begun on November 27th, and the commission's final report was presented to the Parish Medical Society at its regular meeting, on March 28, 1896. We learn that the report, which is voluminous, will be published in full. The following are the conclusions arrived at:

Conclusions in Surgical Cases. — A consideration of the three cases of improvement would certainly lead us to believe that antiphthisin has decided value, and we should commend its careful tentative employment in such cases, in conjunction with general measures and the usual appropriate operative treatment. The glandular case we consider especially encouraging. This case would seem to have required a most serious operation for the removal of the gland, with great uncertainty of ultimate benefit. The improvement under antiphthisin treatment would alone justify us in stating that we have in this remedy a most valuable aid in the management of such cases. We beg to call attention in this connection to the case of Dr. Ambler, of Ohio, reported recently in the New York *Medical Record*, as confirmatory evidence of the value of antiphthisin in glandular tuberculosis. The hypodermic employment of the remedy would seem to be especially advantageous, with careful aseptic precautions.

Conclusions in Medical Cases.—In nearly every case the area of lung involved decreased, if it did not clear up entirely. Auscultation bore out the results of percussion, vesicular respiration replacing morbid breath-sounds in a greater or lesser degree. In cases which were classed as cured, the departure from health is only such as is due to the results of every continued pneumonic process. Secretion was diminished even in the cases marked only improved, and entirely absent in others. Bacteriological reports in most of the cases bore out the results obtained in physical and other examinations. The general condition of the patients improved in the large majority of cases, even in those whose physical examination did not show any great improvement. The use of the remedy was not attended with any danger to the patient. Finally, antiphthisin does seem to have curative, and not simply palliative, qualities.

Tincture of Aloes in the Treatment of Varicose Ulcers.—The *Journal des praticiens* for March 28th contains an abstract from the *Journal des maladies cutanées*, in which it is stated that M. Coffin advises the following treatment: The ulcer should be washed with warm water that has been previously boiled, or with a weak solution of carbolic acid in water, and dried with sterilized absorbent cotton. The ulcer should then be painted with tincture of aloes. If it is superficial, one application is sufficient; if it is more or less deep, two or even three applications will be necessary; each one should be allowed to become thoroughly dry, and not more than three should be made. These paintings sometimes produce very sharp pains, which, however, disappear quite rapidly. An impermeable linen covering is put over the ulcer in such a way as to allow the edges to be seen, and this dressing is covered with cotton and a flannel bandage. If any inflammation is observed on the edges of the ulcer, or if there is a purulent discharge, the dressing should be removed, the sore washed, and the paintings repeated. The dressing should be replaced by a fresh one every four days, and a fresh application of the tincture made if the coat seems to be too thin, and if the granulating surface shows indications of repair. This treatment gives better results if the patient can remain in a recumbent posture; nevertheless, it may be efficient in persons who are obliged to be on their feet the greater part of the day.

The Nature of the Laryngeal Complications of Typhoid Fever.—At a recent meeting of the Laryngological Society of

London, a report of which appears in the April number of the *Journal of Laryngology, Rhinology, and Otology*, Dr. Kanthack read a paper, written by himself and Dr. Drysdale, on this subject. Opinions differed considerably, he said, with regard to the frequency of intralaryngeal ulcerations during typhoid fever. After a short review of the literature relative to this point, he gave an account based on an examination of the post-mortem records of St. Bartholomew's Hospital during the years 1890 to 1894, and up to October, 1895. Of sixty-one cases, fourteen showed loss of substance in the larynx; in eight it was stated in the post-mortem books that the larynx had not been examined; so that, assuming that the larynx had been examined in all the remaining fifty-three cases, which was doubtful, ulceration had been found in twenty-six per cent. of the fatal cases. These defects were situated generally over the tip and edges of the epiglottis and in the neighborhood of the processus vocalis. In these fourteen cases the epiglottis alone had been affected four times, the larynx proper seven times, both larynx and epiglottis once; in two cases the soft palate or pharynx had been ulcerated as well as the epiglottis.

The following associated conditions had been noted: In eight cases congestion or œdema of the lung, pleurisy in four cases, otitis media and pyæmia in one case, and gangrene of the lung in one case. The intestinal ulceration had been extensive in eight cases, limited in two, and healing or healed in four. It was therefore not true, he said, that the laryngeal lesions invariably appeared during the acute period of the fever before the healing commenced.

The next question discussed was the pathological nature of the lesions—were they specifically typhogenetic? Dittrich's assumption, said Dr. Kanthack, that the ulcers were decubital had been set aside as insufficient and erroneous. Rheiner's view was more commendable—viz., that the ulcers were produced by small, repeated injuries acting on debilitated tissue. Rokitansky upheld the typhogenic nature on anatomical reasons, the ulceration affecting the adenoid tissues of the larynx. This, he said, was incorrect, since along the tip and edges of the epiglottis and over the processus vocalis no such tissue ever developed. Others, from analogy of other post- or intra-typhoidal lesions, such as periostitis and parotiditis, had assumed that the typhoid bacillus produced these ulcers. The evidence on this point was weak and insufficient, more especially because until recently the *Bacillus coli* and the typhoid bacillus had been constantly confounded, and therefore none but recent observations by competent bacteriologists could be accepted. E. Fränkel and Brieger had never obtained the typhoid bacillus in these laryngeal ulcers, and they themselves had failed to do so in a recent case. As to other post-typhoidal suppurative lesions, typhoid bacilli had occasionally been found, and Janowski had shown experimentally that the typhoid bacillus was capable of producing suppuration either unaided or with the assistance of the pyococci. He gave, however, no observations regarding laryngeal ulcerations, and hence the bacteriological evidence was very incomplete, and such as there was pointed against their specifically typhogenetic nature.

Further, the clinical evidence did not support the typhogenic specificity; there seemed to be no relationship between the symptoms of the fever and the laryngeal lesions. The condition of the mucous membrane of the mouth and pharynx was of importance; in nine out of twelve fully reported cases it had been described as dry and brown over the tongue, and in four fissured as well, and in one even bleeding. In many, if not in most, cases the patient had been in the so-called typhoid state. This condition, said Dr. Kanthack, must act as a predisposing element, especially since it might be assumed that in many cases the laryngeal mucosa had been in a similar condition. It was then readily injured, and formed a portal for the pyogenic cocci always present in the mouth and larynx. Naturally, this would occur most commonly over and in the most insufficiently vascularized portions—*i. e.*, the tip and edges of the epiglottis and the processus vocalis. This explanation, however, did not satisfy all cases, and difficulties still remained.

Undoubtedly, the lesions were caused by micro-organisms; there was the strongest evidence that these were the pyococci and not, except rarely, the typhoid bacilli. In some cases, no doubt, the latter might be the cause of the trouble, but it was only the soundest possible observations on this point which could be convincing. The best accounts (Brieger and Fränkel), he said, certainly disproved the view that the ulcers were truly typhogenic. Secondary or fresh infections by pyococci were common enough in other bacterial fevers, and there was no reason why this should not occur in typhoid fever, especially since it was well known that in this disease the streptococcus might produce endocarditis, and that in most suppurative lesions occurring during or after the fever pyococci were found. To speak of these ulcers as primarily typhoidal without the soundest and most objective evidence was mere theorizing; the evidence in their possession convinced them that these laryngeal ulcers occurring during the course of typhoid fever were caused by fresh infections with pyogenic organisms, which always abounded in the larynx, and gained a firm foothold on the debilitated tissues, although they could not deny that in an individual case the typhoid bacillus might have escaped and caused the lesion.

Dr. Watson Williams was of opinion that, while the acute and chronic laryngeal lesions arising in the course of or immediately after an attack of typhoid fever were sometimes undoubtedly secondary, and the result of septic infection, they were, in the main, specific and due to the typhoid toxine, and were more frequently associated with the presence of the Eberth-Gaffky bacillus than Dr. Kanthack's observations had led him to believe. Dr. Williams then related the history of a case, and said that it might appear strange that, if the laryngeal and lung lesions were alike due to specific infection, the latter alone should so frequently result in ulceration. In congenital typhoid, he said, the intestines did not present ulceration, and this he attributed to the absence of the saprophytic micro-organisms, especially the *Bacillus coli*, which increased the virulence of the typhoid bacilli, the symbiosis resulting in the characteristic disintegration and ulceration. In the larynx the ulcerative process might be attributed to the fact that it was much exposed to the combined action of saprophytic and typhoid bacilli under conditions which decidedly favored the development of extreme pathogenic properties. Dr. Williams then stated his reasons for having reached this conclusion.

Dr. Kanthack remarked, in reply, that it was generally acknowledged that the presence of Eberth's bacillus in the blood during typhoid fever was extremely rare. The comparatively frequent occurrence of this bacillus in the urine was indisputable, he said, but from that no one could argue that the tissues generally were infected; organisms might readily find their way through the kidneys into the urine and bladder without there being a blood infection. The *Bacterium coli*, for instance, escaped fairly easily into the kidney, and yet the tissues were free from it. To argue from congenital typhoid fever, in his opinion, was to argue from the unknown. Dr. Williams had assumed, he said, that the typhoid bacillus in the lungs produced no ulcerative lesions, because it did

not exist there in symbiosis with the *Bacillus coli*. The speaker, on the other hand, had shown that it was always present there, so that, following Dr. Williams's own argument, necrotic lesions in the lungs should be common, "since the typhoid bacillus existed there in numerous instances." He suspected that there must have been a confusion between the *Bacillus coli* and typhoid bacillus, if not perhaps in all cases, certainly in almost all cases. The case quoted by Dr. Williams, he said, was striking, and, although he could not reject the observation, he was by no means prepared to accept it, because he knew the errors generally committed in the diagnosis between the *Bacillus coli* and Eberth's bacillus. In any case, it had no more value than a single observation could have. Most authors, including Wasserman and himself, had failed to find typhoid bacilli in the suppurative or inflammatory complications of enteric fever. He would not say that the typhoid bacillus never caused such processes, chiefly because Janowski had found it, and because he himself and also Dr. Klein had discovered it in the blood in ulcerative endocarditis. Savarelli, no doubt, was a brilliant writer, but as to the soundness of his discoveries he was less certain, and he would therefore recommend the use of more than a grain of salt with the conclusions of this versatile writer. Facts and not theories were wanted, and what Dr. Williams maintained had not been established as yet—viz., that the typhoid bacillus had been found over and over again in the typhoidal laryngeal ulcers.

The Treatment of Compound Fractures of the Lower Extremity.—The April number of the *Annals of Surgery* contains a report of a recent meeting of the College of Physicians of Philadelphia, at which Dr. L. McLane Tiffany gave a description of his treatment of compound fractures of the lower extremity. The question of disinfection had to be considered first, as every compound fracture was, of course, an infected wound.

The practice generally followed by Dr. Tiffany was as follows: The patient was *always* anæsthetized in cases of compound fracture of the lower extremity. The injured leg was shaved and scrubbed for five or ten minutes with a stout brush, soap, and hot water; and not only was the seat of the injury so treated, but the limb for quite a distance above and below the seat of injury. In compound fracture of the ankle the leg should be cleansed to above the knee. In compound fracture of the thigh the cleansing included shaving of the pubes, the perinæum, the anus, etc., going probably as far as the anterior superior spine of the ilium. If there was grease upon the surface, it was cleansed with turpentine, which was the substance Dr. Tiffany used to take off the grease which, in machinery and railroad accidents, was always present. The wound in the soft tissues was enlarged and everything under the skin was cleansed with soap and water and a nail-brush precisely in the same way as the skin. He did not use turpentine upon the denuded surface, because it burned for a long time, but cleansed raw tissues with ether, and the wound was enlarged wherever necessary so as to completely clean the patient.

With regard to the swelling which took place, the skin did not, but the deep fascia did, decidedly limit the swelling of the limb and produced constriction, therefore it was very freely slit open. When a tibia and fibula were broken, and the fracture of the tibia was compound, the author made a free opening over the fibula six or seven inches long, or as long as might be necessary, through the deep fascia, which was all the more necessary if the fibula fracture was compound. If he had any doubt as to the wound, he slit up the fascia more extensively than the skin. The reason of this was apparent, he said; the organs of the limb ran lengthwise and each was in its own sheath; hence the extravasation of blood and the exudation would run up and down the limb and not find a way out. He freed bones so that they would be movable, thus avoiding tension, both in the present and in the future.

Dr. Tiffany stated that he did this because he found that infection occurred in compound fracture, so there must be some inflammation. When there was cellulitis in the hand it extended up the forearm, and in its treatment long incisions were necessary, not only at or near the seat of the wound, but carried up the forearm as far as the greatest extension of the inflammation and passing through the deep fascia. Whether it was above the knee or below the knee, he treated it in the same way; the fascia of the thigh also was laid open quite as extensively.

The bones should come together easily. If there was much deformity he wired the bone and left the wire in; if there was not much tendency to deformity he stitched the periosteum with fine silk and left it, giving himself no trouble about the wire or about the silk which was left in. The wire might require removal, but the silk never was heard from.

With regard to putting the limb in position, he said, perhaps it might be wise, if there was much laceration, to use an apposition suture of fine silk inside the limb, just to hold the wound lightly together, but the wound was never closed under any circumstances. Then he put on a voluminous dressing of sterile gauze—he did not use iodoform—then cotton, and then a plaster-of-Paris bandage. In fractures below the knee, he carried the plaster-of-Paris bandage from the base of the toes up to the knee, unless the knee was injured. He put the plaster-of-Paris bandage on moderately snug—just how snug was a matter which was decided by the hand of the surgeon who put on the bandage. He always suspended the limb from the ceiling, because it was more or less heavy, and injury might follow motion on the patient's part; at times an anterior splint was employed or simply a rope with a loop or two holding the limb; it was raised three or four inches above the bed. When the patient pulled himself up in bed his leg did not drag along the pillow. The author did all this before the patient recovered from the anæsthesia. The limb was left in suspension without inspection of the wound for several weeks. Generally speaking, he said, he did not have to touch his patient for a number of weeks. At the end of six weeks a certain amount of shriveling contraction could be found, but the leg swung and the patient was comfortable. Finally, the splint was cut open, and a section taken out in front, while behind it was nearly cut through so as to form a hinge; a bandage was then put on and the man got up on crutches.

In compound fractures of the thigh the same general treatment was carried out, and Dr. Tiffany decided whether the patient's leg was to be put into a long splint or Buck's extension used, or whether it was to go up in a suspensory apparatus, which could be equally well supplied after this dressing. The leg must remain a number of weeks without being touched. When the casing was taken off, he said, he expected to find a granulating wound level with the skin. Extravasation of blood was pretty certain to occur, and the white plaster splint became purple, but that was not a matter of importance. By the patient's temperature and pulse he judged whether another dressing was required. For a day or two at first the temperature went up and then dropped to normal. The small variations that took place in the treatment indicated would, he said, depend upon the appearance of the fracture, the size of the wound, etc. The first and most important thing was cleansing, the second was the thor-

ough cutting of the deep fascia so as to allow of swelling, after which the patient did well. In regard to small punctures through the skin, the important matter to be considered was what sort of dirt had got in through the puncture. On general principles, the smaller the gateway the less chance there was of dirt getting in, but there was no certainty that dirt had not gone through a small as well as a large wound; for that reason it was the speaker's habit always to enlarge a small opening through the skin in order to clean it thoroughly and to keep it clean as well as he could. If he did not do this, he said, he should have to wait three or four days to see whether spreading inflammation would be set up. By opening the wound and cleaning it he was moderately certain of getting a clean wound, and the puncture through the skin was prevented from doing harm.

In regard to extensive laceration, and as to whether the limb could be saved or not, he thought that it was a matter of dirt also rather than of wound. Emphysema and spreading gangrene were unquestionably bacteriological diseases. Gas-producing bacilli were well known. If they were not present, there was no emphysematous gangrene. In every case where spreading gangrene was present the bacillus could be isolated in a test tube, so that it was a question of dirt.

In regard to antiseptic irrigations, he thought they were useful according to the amount of hot water that was used, and the disadvantage of it was in proportion to the amount of corrosive sublimate used. He thought hot water was the best antiseptic. Corrosive sublimate had a bad action on the tissues. It produced destruction of the tissue. The stronger the antiseptic used the more did it form a film over the exposed surface, and thus protect the dirt which had got beneath the surface. Corrosive sublimate did harm to a wound, but hot-water irrigation and scrubbing did good. The water and the instruments were boiled and the gauze was sterilized by steam heat; the only things not sterilized by steam heat were the patient and the surgeon's hands and forearms. The patient was sterilized by scrubbing and hot water and soap, and the surgeon's hands and forearms were treated in the same way.

The Association of American Medical Colleges will hold its next regular meeting in Atlanta on May 4th, under the presidency of Dr. William Osler, of Baltimore. It is announced that the following-named colleges have paid the dues for the past year:

Medical Department, Arkansas Industrial University.
Medical Department, University of California.
Gross Medical College, of Denver.
Medical Department, Yale University.
Medical Department, Columbia University, Washington.
Medical Department, University of Georgetown, Washington.
Medical Department, Howard University, Washington.
Medical Department, University of Georgia, Augusta.
Rush Medical College, Chicago.
Medical Department, Northwestern University, Chicago.
Woman's Medical College, Northwestern University, Chicago.
College of Physicians and Surgeons, Chicago.
Medical Department, University of Iowa, Iowa City.
Keokuk Medical College.
Hospital College of Medicine, Louisville.
Louisville Medical College, Louisville.
Medical Department, University of Louisville.
Kentucky School of Medicine, Louisville.
University of Maryland, School of Medicine, Baltimore.
College of Physicians and Surgeons, Baltimore.
Baltimore Medical College, Baltimore.
Woman's Medical College, Baltimore.
Medical Department, Johns Hopkins University, Baltimore.
Medical Department, University of Michigan, Ann Arbor.
Detroit College of Medicine.
Medical Department, University of Minnesota, Minneapolis.
Omaha Medical College.
Creighton Medical College, Omaha.
College of Medicine, Syracuse University.
Medical College of Ohio, Cincinnati.
Cincinnati College of Medicine and Surgery.
Miami Medical College, Cincinnati.
Starling Medical College, Columbus.
Columbus Medical College.
Ohio Medical University, Columbus.
Medical Department, Willamette University, Portland, Ore.
Medico-chirurgical College, Philadelphia.
Woman's Medical College of Pennsylvania, Philadelphia.
Western Pennsylvania Medical College, Pittsburgh.
Wisconsin College of Physicians and Surgeons, Milwaukee.
Toledo Medical College.
Fort Wayne College of Medicine.
Laura Memorial College, Cincinnati.
Central College of Physicians and Surgeons, Indianapolis.
Kansas Medical College, Topeka.
Barnes Medical College, St. Louis.
Medical Department, University of Wooster, Cleveland.
College of Physicians and Surgeons, St. Louis.
Keokuk College of Physicians and Surgeons.
Medical College of Indiana, Indianapolis.
Medical Department, University of Denver.
College of Physicians and Surgeons, of Minneapolis.
Medical Department, University of Colorado, Boulder.
University of Oregon, Portland.
College of Physicians and Surgeons, Boston.

Accidents due to the Use of Fly-blisters.—This was the subject of a discussion at a recent meeting of the *Société de thérapeutique*, a report of which appears in the *Presse médicale* for March 28th. M. Ferrand said that he hoped to prove that this treatment was not responsible for all the accidents which had been attributed it. No doubt, he said, it had led to serious accidents, but all kinds of medicaments were capable of provoking accidents if they were employed without discretion. He thought this was not a sufficient reason for proscribing its use, as its favorable influence as a therapeutic agent had been demonstrated in a number of circumstances in such a way as to leave no doubt as to its efficacy. This treatment was said to develop latent nephritis and to give rise to an inflammatory process in perfectly normal kidneys. This, said M. Ferrand, was excessively rare and was caused by a too extensive and too prolonged application of the vesicant in peculiarly susceptible subjects. With regard to its causing a traumatic surface which might become a source of infection, he said, a careful and judicious physician would prevent this complication; if aseptic dressing was used no suppuration would follow. A fact, he said, which certainly demonstrated that the accidents imputed to this treatment should be laid to those who did not know how to employ it was that cantharidin, employed in small doses, possessed a diuretic action which had been attested by such men as Cruveilhier and Lancereaux, who had not hesitated to prescribe it in cases of Bright's disease with a view to its efficacious action on the renal filter. Pathological physiology, said

M. Ferrand, which confirmed the statistics furnished by the clinic, showed, moreover, that fly-blisters might, in moderation, aid in the defense of the organism by favoring the processes of the phagocytes.

M. Huchard, although he accepted M. Ferrand's explanations, stated that he considered this treatment as dangerous, and thought that it should be definitively excluded from medical practice. Not only was it a constant menace to the kidneys, he said, but it might open a way to the most dangerous infections. In acute pyrexia, especially, its employment should be proscribed; in pneumonia, broncho-pneumonia, pleurisy, typhoid fever, etc., no good results had followed its use. The only result that he had observed had been the introduction into the organism of a new toxic factor capable of provoking the most serious disorders. The influence of fly-blisters, he said, was equally dangerous in cardiac troubles and in angina pectoris, for in such cases the urinary depuration was generally more or less impeded.

M. Le Gendre thought that fly-blisters were capable of acting by suggestion; and from this point of view they might render good service. With regard to their influence on the phagocytes, it seemed to him altogether problematical, as it was yet far from being demonstrated that they had the power to provoke a generalized phagocytic process.

Laparotomy in the Newly Born.—In the *Journal* for March 21st Dr. Kelsey gave a brief account of a successful laparotomy performed on a very young infant for intussusception, and asked for information as to the results of abdominal section in the cases of such young children. In response to this request, Dr. Ferguson, in our issue for March 28th, told of a successful operation for hernia on a very young subject. It seems that the subjection of infants of a very tender age to laparotomy has been commoner than is generally supposed; in the *Centralblatt für Gynäkologie* for March 28th Dr. Marjantschik, of Kiew, gives a detailed account of a case of laparotomy for hernia funiculi umbilicalis performed on a child about thirty-two hours old. The child died on the fifth day after the operation. Marjantschik gives the following table of the cases of the operation for funicular hernia on record up to the year 1894, so far as he has been able to find the accounts:

No.	Author.	Year.	Publication.	Reference.	Size of the hernia.	Age of the child.	Result.
1	Bérard.	1836	*Jour. des connaiss. méd.*	Schmidt's *Jahrb.*, 1836.	.....	.....	Recovery.
2	A Ferrata hospital physician.	....	.....	Cruveilhier, *Pathol. gén.*, 1849.	.....	.....	Recovery.
3	Lindfors.	1882	*Hygiea*, Jan., 1882.	*Ctrlbl. f. Gyn.*, 1889, No. 28.	5 ctm.	.....	Recovery on the 28th day.
4	Krukenberg.	1882	*Arch. f. Gyn.*, xv, 2, 1882.	*Ctrlbl. f. Gyn.*, 1883, No. 1.	3·5 ctm.	14 hours.	Recovery on the 30th day.
5	Ronaldson.	1882	*Trans. of the Edinb. Obstet. Soc.*, viii, 1882–'83.	*Am. Jour. of Obstet.*, 1890.	.....	.....	Recovery.
6	Pagenstecher.	1883	*Bull. gén. de thérap.*, 1883.	Virchow and Hirsch's *Jahrb.*, 1883.	.....	.....	Recovery.
7	Felsenreich.	1883	*Wien. med. Presse*, 1883.	*Ctrlbl. f. Gyn.*, 1889, No. 28.	8 × 4 ctm.	2 days.	Recovery.
8	Godlee.	1883	*Med. Times and Gaz.*, 1883.	*Ctrlbl. f. Gyn.*, 1889, No. 28.	.....	14 days.	Death on the 3d day.
9	Robinson.	1883	*Lancet*, 1883.	Virchow and Hirsch's *Jahrb.*, 1883.	.....	1 day.	Death in 2 hours.
10	Treves.	1884	*Lancet*, 1884.	*Ctrlbl. f. Gyn.*, 1889, No. 28.	.....	.....	Death from convulsions on the 23d day, when the child had nearly recovered.
11	Harries.	1886	*Lancet*, 1886.	*Am. Jour. of Obstet.*, 1890.	.....	A few hours.	Recovery.
12	Caldwell.	1886	*Trans. of the Gynæc. Soc. of Chicago*, 1886.	*Ctrlbl. f. Gyn.*, 1887, No. 2.	.....	.....	Recovery.
13	Reuter.	1887	*Verh. d. geb. Ges. von Hamburg.*	*Ctrlbl. f. Gyn.*, 1887.	4 × 5 ctm.	.....	Recovery.
14	Piperno.	1887	*Sperimentale*, Dec., 1887.	*Ctrlbl. f. Gyn.*, 1887, p. 464.	5 ctm.	.....	Death on the 2d day.
15	Dunlap.	1888	*Jour. of the Am. Med. Assoc.*, 1888.	*Ctrlbl. f. Gyn.*, 1888, p. 709.	.....	1 hour.	Recovery.
16	Phänomenoff and Stolypinsky.	1888	*Drewnik kasanskich Wratschej*, 1888.	*Ctrlbl. f. Gyn.*, 1889, No. 11; *Vratch*, 1890, p. 419.	Little finger could not be passed.	1 hour.	Recovery.
17	Barton.	1889	*Med. News*, 1889.	*Am. Jour. of Obstet.*, 1890.	.....	23 hours.	Recovery.
18	Thieme.	1889	*Frauenarzt*, 1889, No. 5.	.....	.....	.....	Recovery.
19	Stolypinsky.	1889	*Jour. akusch. u. sheusz. Bolesnej*, 1889, p. 841.	.....	2 finger-breadths.	2 days.	Death on the 4th day.
20	Macdonald.	1890	*Am. Jour. of Obstet.*, 1890.	Frommel's *Jahresb.*, 1890, p. 131.	.....	.....	Recovery.
21	Baum and Colla.	1890	*Ctrlbl. f. Gyn.*, 1890, No. 21.	.....	Little finger could be passed.	15 hours.	Death in 7 hours.
22	Landerer.	1890	*Verh. d. geb. Ges. in Leipzig.*	*Ctrlbl. f. Gyn.*, 1890, p. 552.	.....	.....	Recovery.
23	Kaltenbach and Pütz.	1890	Pütz, *Inaug.-Diss.*, Halle, 1891.	.....	That of a 10-pfennig piece.	2 days.	Recovery.
24	de Larabrie (Routier).	1891	*Arch. gén. de méd.*, Sept., 1891.	*Semaine méd.*, 1891, p. 260.	.....	7 hours.	Recovery.
25	Salmon.	1891	*Gaz. des hôp.*, 1891, p. 1219.	*Ctrlbl. f. Gyn.*, 1892, p. 486.	.....	.....	Recovery on the 14th day.
26	Hinkinson.	1891	*N. Y. Med. Jour.*, May 23, 1891.	*Ctrlbl. f. Chir.*, 1892, No. 8.	.....	.....	Recovery.
27	Runge.	1891	*Arch. f. Gyn.*, 1891.	*Ctrlbl. f. Gyn.*, 1892.	.....	.....	Recovery in 20 days.
28	Berger.	1893	*Rev de chir.*, 1893, No. 10.	*Ctrlbl. f. Gyn.*, 1894, p. 615.	.....	2 days.	Recovery.
29	Berger.	1893	*Rev. de chir.*, 1893, No. 10.	*Ctrlbl. f. Gyn.*, 1894, p. 615.	.....	4 days.	Recovery.
30	Dolinsky.	1893	.....	*Vratch*, 1893, pp. 261, 403.	.....	.....	Recovery.
31	Bardeleben and Rettig.	1894	Rettig, *Inaug.-Diss.*, Berlin, 1894.	.....	That of a walnut.	1 day.	Death in 5 hours.

Lectures and Addresses.

AN ABSTRACT OF A LECTURE ON THE NEW RAYS OF RÖNTGEN, THE NEW PHOTOGRAPHY, AND THE PHOTO-FLUOROSCOPE; THEIR JOINT APPLICATION IN MEDICINE.

Delivered before the Medico-legal Society, April 15, 1896.

By J. MOUNT BLEYER, M. D., F. R. A. M. S.,
MEMBER OF THE SOCIÉTÉ FRANÇAISE D'OTOLOGIE, DE LARYNGOLOGIE, ETC., PARIS, ETC.

[After a few introductory remarks, Dr. Bleyer spoke substantially as follows:]

ALLOW me to call your attention to some early work on the invisible rays. It is known that the force which we call light is not a tangible entity that we can lay hold of like a piece of wood; it is a very rapid wave motion or vibration of a hypothetical medium called the luminiferous ether, which motion, communicated to the retina, gives rise to a sensation which we call light.

We are accustomed to speak of substances as being opaque, translucent, or transparent, but these terms are not absolute by any means, as will be seen from the following statement: A sheet of gold of, say, an eighth of an inch thickness appears to us to be opaque—that is, we can not see through it; ordinary glass, on the other hand, we can see through. But reduce the gold to a thin leaf by rolling and hammering, and it allows light to pass through; increase your glass to a very great thickness and it becomes absolutely opaque, or allows no light to pass.

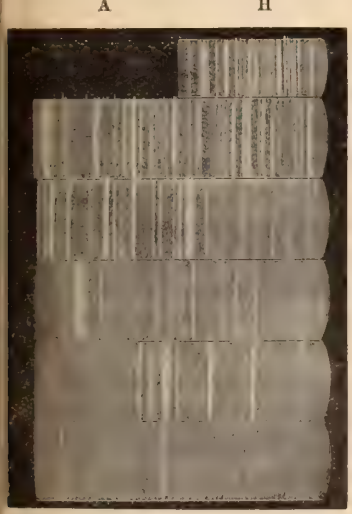


FIG. 1.—Spectrogram of the spectrum of cadmium (from the *Photogram*).

We speak of daylight as white light, but if a narrow slice of daylight is allowed to fall upon a prism, we obtain a band of colors, ranging from a deep crimson red, through orange, yellow, green, and blue, to violet, which band is called the spectrum. When sunlight or daylight is examined in this way, the spectrum is found to be crossed by numerous transverse dark lines, which may be popularly described as landmarks or milestones. Of such a comparatively finite nature is our sight or brain that we can only discern a very small portion of the spectrum; that is to say, as long as the vibratory motion lies within certain limits we are sensible of the same as light, but at either end beyond these limits stretch fields utterly away from our visual sensations, but they can be detected by other means, such as photography.

In the spectrogram of the spectrum of cadmium (Fig. 1), as made by J. W. Gifford, of London, we have a reproduction of a photogram of the spectrum. This illustration shows that the only portion which can be seen by us is that part lying between A and H. It has been demonstrated that there are vibrations or waves far beyond this origin, as is shown by photography. In this region beyond H, or the violet, it stretches at least nine or ten times as far; how much farther we can not say. Langley's spectrum, which he made by means of his bolometer, shows us the red at one end, and in the infra or invisible red region an extension of fourteen times the length of the visible spectrum, as seen in Fig. 1.

Professor Langley, of the Smithsonian Institution, has given us some very valuable information in regard to the spectrum of invisible light by his most ingenious invention,

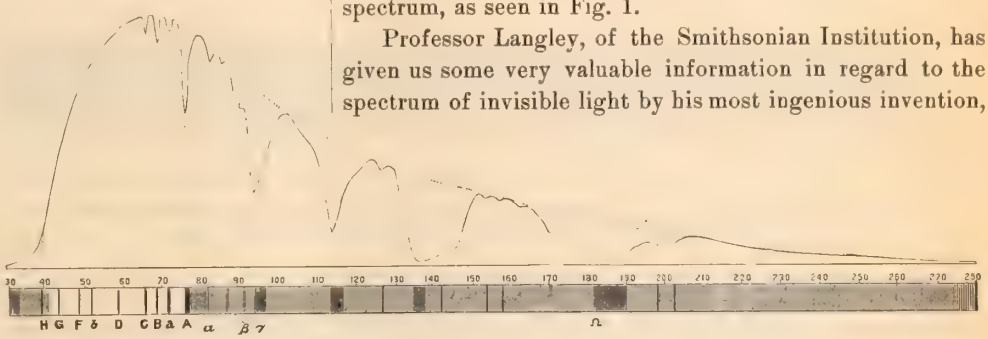


FIG. 2.—Langley's normal bolometric spectrum, showing curves of galvanometer deflections (from the *Photogram*).

the bolometer. This device, as used by him, consists of an instrument for measuring minute differences of radiant heat by changes in the electric resistance of a blackened conductor exposed to it. It consists of a series of plates of metal connected with a battery and a galvanometer, to the latter being attached a very minute concave mirror, on to which is thrown a narrow pencil of light. When the spectrum falls upon the blackened surface connected with the metal plates, the electric resistance is changed, the galvanometer is deflected, and the spot of light reflected from the concave mirror, which is hung upon a very fine quartz fibre, is received upon a photographic plate. On development, a figure like the chain of mountains shown in Fig. 2 above the spectrum is obtained, from which the line spectrum (called a bolograph) is constructed. The theory is that where the infra-red spectrum falls there is a development of heat, but where the Fraunhofer lines occur there is no heat, and therefore there is a deflection of the spot of light. With the bolometer it is possible to measure a difference of heat of a hundred-thousandth of a degree of Fahrenheit's thermometer scale.*

In experiments made by the late Professor Tyndall, in his most popular lectures at the Royal Institution, he concentrated the invisible red rays from an electric lantern, and in their focus fused and burned many metals. Captain Abney also photographed, in an absolutely dark room, a kettle of boiling water, by the same infra-red rays.

* E. J. Wall, F. R. P. S. *Invisible Rays.* London.

The close connection between light and electricity has long been known, for Clerk Maxwell enunciated the theory that light itself was but an electro-magnetic phenomenon, and that what we called waves of light were not mechanical waves at all, but were immensely rapid electric displacements taking place in the all-pervading ether of space; and Professor Sylvanus Thompson states it as his opinion that with further developments of the theory it would be found to satisfactorily explain all the phenomena of light. That electricity generates light or vibratory wave motion is, of course, common knowledge, and that electricity is itself but a wavelike motion has been shown by the classic experiments of Hertz, who proved still further the similarity of electricity to light by reflecting and refracting the waves of electricity he generated just as if they had been light-waves.

We can not see electricity, and we can not see the ultra-violet and infra-red rays, but we can prove the existence of the same by very easy experiments. In the case of electricity, the famous researches of Hertz have placed the existence of these electrical waves beyond doubt; the existence of the infra-red light waves has been proved not only by photography, but also by Professor Langley's bolometer, and the results obtained by this as well as by photography in the ultra-violet.

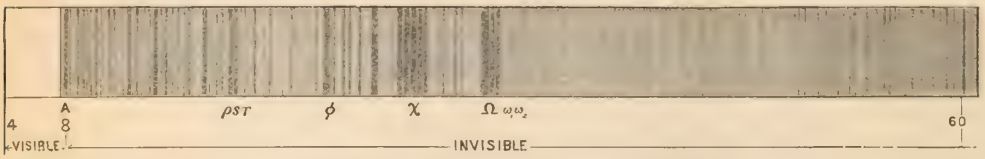


Fig. 3.—Langley's latest spectrum. The white portion on the left is the visible spectrum, the shaded portion on the right representing the invisible or infra-red (from the *Photogram*).

Besides, however, these waves or rays, there are others directly connected with the phenomena of electricity which become distinctly visible under certain conditions. If we take a glass tube and pass a wire through each end and close the ends up, and then draw the air off by a fine aperture so as to leave, as far as we can, very little or no air remaining, we have what is known as a Crookes's tube; and on passing a current of electricity through this, we obtain some striking phenomena. For instance, from the anode, or positive pole, of the battery, induction coil, or static machine supplying the current, we have a series of beautiful striations or *striæ* of light, which vary in color with the gas, a small residuum of which remains in the tube. These, however, have but little interest to us. From the cathode, or negative pole, proceeds a stream of rays which have some extraordinary properties, and have received the name of "cathode rays." In the first place, these cathode rays cause the most brilliant phosphorescence even in glass, but on certain well known chemical products the light is extremely brilliant, and it is possible, by the interposition of screens or patterns cut to a particular shape, to obtain sharp, clear-cut shadows of the patterns. Further than that, if a series of light vanes or paddles is mounted on an axis inside of these tubes, they will rapidly rotate like the well-known radiometer or light mill. Then, again, these cathode rays have the property of passing through thin metallic foil in an absolutely straight line, and exciting fluorescence when allowed to fall upon paper saturated with various chemicals, such as platinocyanide of barium or tungstate of calcium. Herr Lenard, of Hungary, examined these rays in 1864, and conducted numerous experiments. By placing the ordinary photographic plate and sensitive paper behind various substances, such as aluminum, wood, quartz, etc., he was able to obtain shadow images, or photographs, so called, showing the permeability of these substances to these rays.

On applying an ordinary magnet to these rays, it was found that they were deflected or attracted by the magnet. Practically, then, we have come back to one of our first statements—namely, that the terms opaque, translucent, and transparent are but relative; they are practically interchangeable under certain conditions; for quartz, which is quite transparent to ordinary light, is absolutely opaque to these rays, and aluminum and cardboard of such a thickness as to be opaque to ordinary light are transparent or translucent to these rays.

This brings me to the point of considering in a concise manner the new light of Röntgen, the new photography, the fluoroscope, and their joint application in medicine and surgery. It is but a few weeks since the world was startled by the statement from Professor Röntgen that he was able to photograph through opaque objects. Naturally, this gave rise to considerable incredulity and fun at the expense of the learned professor, and even some of the shining lights in the scientific world were not loath to show their erudition by discounting the discovery, and ascribing the effects to the ultra-violet rays and the electric waves of Hertz. The discovery of these new rays, which bear the now famous name of Röntgen, was due, as is so often the case, entirely to accident. He was experimenting with a Crookes's tube wrapped in an opaque material, and on his bench lay a piece of sensitive paper on which he found, after a powerful current had passed through the tube, that a black line had been formed on the paper. Keenly alive to all extraordinary phenomena, the observant professor proceeded to investigate, with the result of the discovery of what is practically something absolutely new, the value of which we can not at present entirely begin to appreciate.

Now as to the difference between the cathodic and the "X" rays of Röntgen. The essential differences and similarities between the cathodic rays and "X" rays may well be seen from his original communication. Nevertheless, a brief summarizing of these facts will bring them again before your notice. Röntgen light is not deflected by magnets, cathodic rays are; Röntgen rays are not absorbed or diffused so readily as cathodic rays. The Röntgen light will traverse several centimetres of wood and several millimetres of metal or glass, while cathodic rays fail to pass through any but thin films of glass, aluminum, etc. The Röntgen

rays excite fluorescence and give shadow pictures at a distance of many inches, and even feet, from the Crookes's tube, while the cathodic rays are absorbed or diffused at a distance of fifty inches. The cathode rays proceed from the cathode itself, while, according to Röntgen, the "X" rays do not proceed from the cathode, but from that part of the glass where the cathode rays strike. The main points of similarity between the two are their powerful action on photographically sensitive films and their rectilinear propagation, as shown by the sharply defined shadows.

How are these cathode rays formed?

The air is a bad conductor of electricity, and when the latter passes across an air space we observe a brilliant spark; but, as has been stated, by exhaustion of the air the character of the discharge is altered, a fact first discovered by Hittorf and worked out by Plücker and Geissler, whose tubes are well known. Fantastic patterns are formed inside a vacuum, distinctly visible in various colors because of the peculiar nature of the glass or fluid which surrounds them. In 1879 Crookes replaced the cathode wire with a small flat or plane surface, and thus obtained a cylindrical beam of light which, proceeding in a straight line till it reached the opposite wall of the tube, behaved itself rather like a magnetic rod than like light, and possessed an elasticity of extraordinary character. The one end was closely connected to the negative electrode, the other, however, was free.

It has been well known for some time that this "magnetic rod," or cathodic light, was extremely rich in ultraviolet rays, and that it possessed the power of exciting fluorescence and setting up chemical action. To explain these phenomena, Crookes assumed that this stream of light was caused by a continuous stream of molecules of gas of enormous rapidity, proceeding from the cathode, while in a Geissler tube, which contained more gas, this repulsion of the gas molecules from the negative pole was to some extent accompanied by continuous collisions of the gas molecules. This hypothesis received a decided blow by the discoveries of Hertz and Lenard. Hertz stated that it must be possible to produce this phenomenon outside the vacuum tube, and that, being engendered in the tube, it must extend into the surrounding air. Lenard tested this experimentally, and found a substance which would allow the cathode rays to pass into the air. He obtained a Crookes's tube, and at the end opposite the cathode, where these rays struck, he replaced the glass with a sheet of aluminum, which was of about the thickness of gold leaf, but was at the same time absolutely impervious to gases. By placing in the path of any rays which might proceed from this aluminum window a piece of paper soaked with a fluorescent substance, Lenard proved conclusively that Hertz's assumption was correct, and that Crookes's explanation of the continuous stream of gas molecules was no longer tenable. Röntgen's grand discovery followed all this.

Now, having fairly touched upon the main principles and theories associated with these light rays, I shall call your attention to the screen, or fluoroscope.

The accidental discovery of the phosphorescent screen by Röntgen and Lenard, and the latest improvement upon it by Thomas A. Edison, called by him the fluoroscope, are the outcome of the phosphorescence tubes. They are simply tubes filled with certain phosphorescent powders and hermetically sealed. When the tubes are observed in a dark room (and of course before exposure to light), they are invisible; if, however, a piece of magnesium wire is burned close to the tubes, they will be found to shine in the dark and to emit various colored rays of faint light. To this curious effect is given the name of phosphorescence; and the same result is also obtained when they are exposed to sunlight. The chemical substances which possess the property of developing light after exposure to light are called phosphori. There are many forms of these substances known to us, prepared differently and bearing different names. The phosphorescence of these various bodies, unlike that of the curious element phosphorus, is produced independently of any chemical change; if they are inclosed in sealed glass tubes and excluded from light, they retain the property of showing phosphorescence for many years, while the light emitted from phosphorus is due to the slow oxidation of this element. On placing it in water or in nitrogen, the light is no longer produced. This question of on what principle it is possible to explain the cause of the emission of light after exposing phosphorus to the sun or any brilliant artificial light has given rise to several theories.

The most rational one suggested is that the undulations of light convey their own vibratory motions to the phosphori, just as one musical instrument may cause another to vibrate sympathetically with it, and phosphorescence is observed so long as the substance continues to vibrate in a dark room, and without a constant accession or supply of vibratory power the light becomes fainter and fainter until it is no longer capable of affecting the eye; the vibratory power, like any other mechanical motion, must come to an end when cut off from its source of power, the sun or the burning magnesium, which originally set it in motion. This opinion is further confirmed when we take into account the large number of substances which may become phosphorescent in a tolerably high degree. If this property was confined to a few bodies, the theory might not be so applicable; but if it is agreed beforehand that any particles may become luminous if they are capable of entering into that state of vibration which we suppose belongs to the sun and to artificial sources of light, then it can be understood why the great number of organic or inorganic substances are all considered to enjoy in a limited degree the property of phosphorescence after exposure to the sun. Gmelin enumerated a large number of chemical bodies and common substances when he spoke of those things which became phosphorescent by irradiation. Also Edison examined 1,800 substances and found seventy-two that were fluoroscent.

Now that we have traced the principle underlying the phosphorescent screen, or fluoroscope, a brief outline of this invention is in place. This screen is in its latest dress, as designed by Edison. It consists of a flaring box, curved at one end to fit over the forehead and eyes like a stereo-

scope. The end of the box is closed by a pasteboard cover on the inside of which is spread a layer of tungstate of calcium, which, according to the inventor's report, has been found to possess six times the fluorescent power under the influence of the "X" rays that barium platinocyanide has.

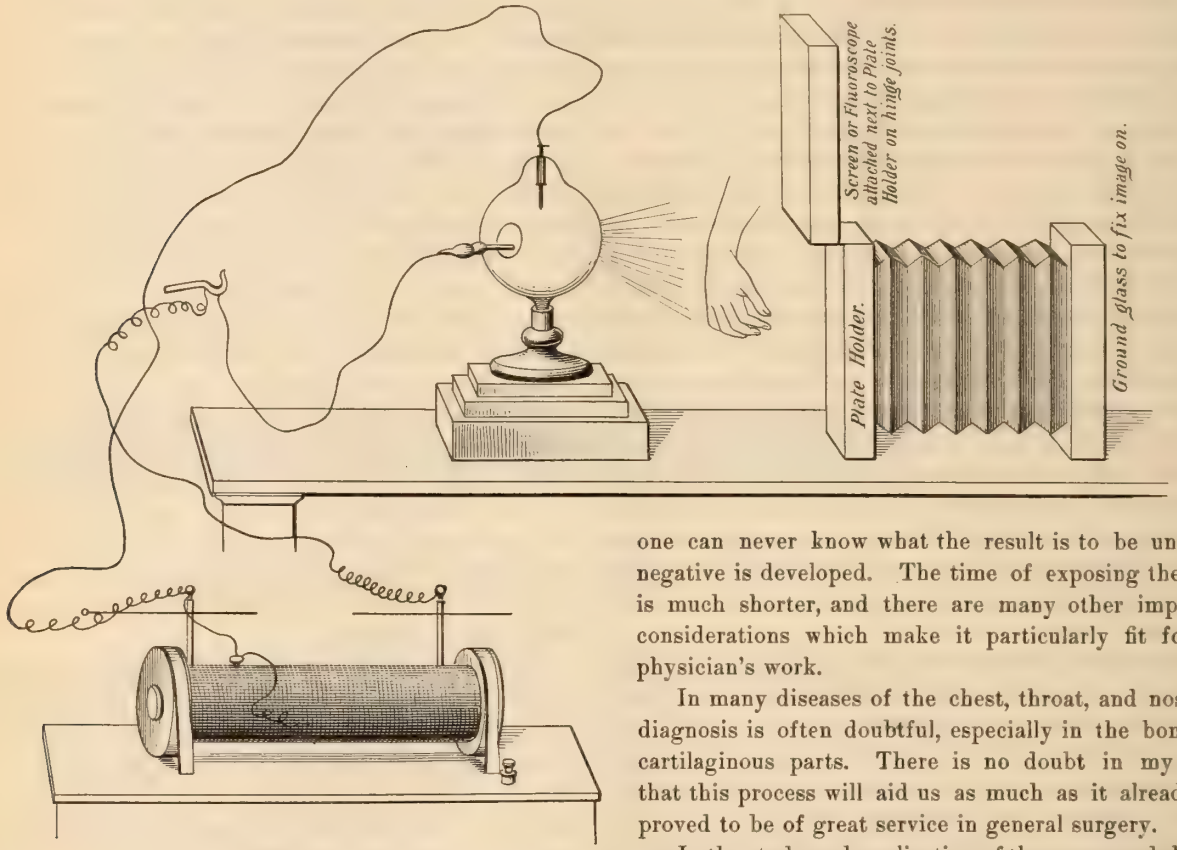


Fig. 4.

The practical applications of the screen are many. For simple illustration purposes, one has but to place the object to be observed in front of the screen and behind the vacuum tubes in a fluorescent state. The shadow is formed on the screen and can be observed at once. In order to exclude all light from the screen, the curved part around the eyes is encircled by a lining of feathers.

The photo-fluoroscope is an instrument which differs from all other fluoroscopes in the fact that it allows a direct shadow picture to be taken from the screen on the fluoroscope, after it is focused through the screen, and the image is seen on the ground glass in the photographic focusing box. With this device it is possible first to see and judge of the object to be photographed, instead of making a picture blindly—that is, without knowing what is in the negative until it is developed. The Röntgen rays, when they pass through the screen, reach the ground glass by first passing through the object. When this is done, the sensitive plate in a holder is exposed next to the screen, and then allowed a certain time of exposure.

The illustration shows the arrangement of the model. It consists of a photographic focus box, and ground glass, mounted on a movable table. To this box is attached on hinges a door, carrying a fluorescent screen, which closes directly over the sensitive plate. Just in front of the screen there is room for the object to be pictured, also a holder for placing the Crookes's tube at any distance. The coil is on the same stand.

The Röntgen method has not these advantages; by it one can never know what the result is to be until the negative is developed. The time of exposing the plate is much shorter, and there are many other important considerations which make it particularly fit for the physician's work.

In many diseases of the chest, throat, and nose the diagnosis is often doubtful, especially in the bony and cartilaginous parts. There is no doubt in my mind that this process will aid us as much as it already has proved to be of great service in general surgery.

In the study and application of these rays and shadow photography in medicine and surgery the possibilities which were opened to us by this discovery are startling. No one can yet foreshadow the coming researches to be made.

From what has been said and demonstrated thus far we can readily enough understand the lessons taught us by these various methods of taking Röntgen pictures and viewing opaque objects with the screen and Crookes's tube.

Original Communications.

A RÖNTGEN PICTURE OF A MARASMIC INFANT.

By HENRY D. CHAPIN, M.D., and WILLIAM J. MORTON, M.D.

History of the Case, by Dr. Chapin.—William J., aged six weeks, was admitted into the Babies' Wards of the New York Post-graduate Hospital on March 17, 1896. He presented a typical clinical picture of a condition very often seen in infants' hospitals and dispensaries, due to bad food

and air, and popularly known as marasmus or atrophy. The mother was unmarried, without means, and had fed the baby since birth on canned condensed milk. For two days previous to its admission the baby had vomited all its feedings, suffered much from colic, and had rather constipated, green stools. Its weight, on admission, was six pounds, eleven ounces. The temperature varied from 97° to 101° F., the pulse from 100 to 150, and the respirations from 30 to 50. In spite of careful nursing and feeding, the infant was unable to assimilate its nourishment properly, and died on April 9th. It occurred to me that this would be a good case to test the transmissibility of the Röntgen rays, and accordingly I requested Dr. William J. Morton to undertake the experiment. The method employed will be explained further on by Dr. Morton.

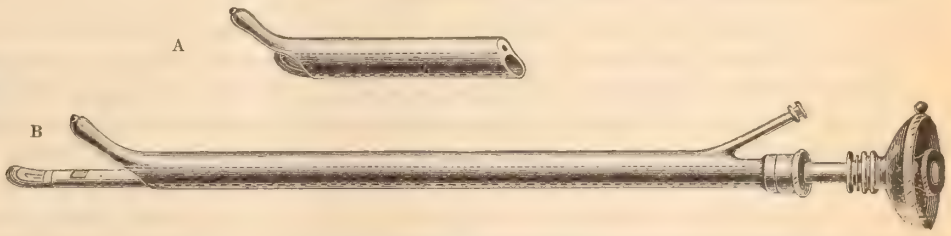
The osseous system is exceedingly well marked, the wrists, hands, feet, and various other parts showing the stage to which ossification has advanced at this period of life. The internal organs show more plainly on the negative plate than in the print. On the former, faint traces of the convolutions can be noted. The heart and liver are seen in shadow, and the distended stomach and intestines stand out pretty plainly. The autopsy showed a healthy brain, beginning hypostatic pneumonia at the base of the right lung, a very black liver due to infiltration of bile and decomposition, and a catarrhal condition of the stomach and bowels, which were much distended with gas. On the plate, a slight difference in shading suggests the position of the congested, unaerated lung. The success here attained with the viscera justifies us in the hope that, with improvements that are constantly taking place in this process, the internal organs may be located and investigated in time as successfully as the bony system is now laid bare to the surgeon's eye.

The Picture, by Dr. Morton.—The Crookes's tube was placed at a distance of fourteen inches above the child and in a vertical line above the epigastric region. The sensitive plate was inclosed within a cardboard box. Probably less than forty minutes actual time was consumed in affecting the plate. With the excitation of tubes now at command, fifteen minutes would suffice to produce the result shown. Since the bones of a child of this age are so freely penetrated and traversed by the X ray, the contrast between flesh and bones is not so marked as in the case of adults. In relation to showing the situation of organs, this is largely a matter of the time of exposure. An under-exposure shows the organs in silhouette, while with a longer exposure the rays soon penetrate the plate and obliterate the record. The picture here reproduced was timed to show the skeletal bones only, and therefore does not do full justice to the possibilities of location of other internal parts.

URETERAL CATHETERISM.

By FERD. C. VALENTINE, M. D.

The gratitude of the profession in this country is doubtless due Dr. Willy Meyer for his able description of the technique of ureteral catheterism in the *New York Medical Journal* for March 21, 1896. This article, read before the Section in General Surgery of the New York Academy of Medicine on November 11, 1895, is particularly satisfactory to me, as in its greater part it confirms my demonstration of ureter cystoscopes before the American Medical Association at its Baltimore meeting on May 8, 1895 (published in the *Journal of the American Medical Association*, July 6, 1895). In that same paper I also showed as much as the inventor would allow of Nitze's operating cystoscope—namely, only the drawings.*



Nitze's ureter cystoscope. A, beak closed for insertion into the bladder; B, inner tube projected to illuminate the bladder.

* I may be permitted to quote from my paper above mentioned:

". . . 3. *Catheterization of the Ureters.*—When Dr. Max Nitze, of Berlin, claimed priority in successful catheterization of the ureters in the male in No. 9 of the *Centralblatt für Chirurgie* for 1895, he reserved for himself a discussion of the present and future diagnostic and therapeutic value of ureteral catheterization. In view thereof, and in view of the magnificent work done by Howard A. Kelly, of Baltimore, little beyond a demonstration of the instruments remains to be said here.

"Kelly's and Pawlik's methods have rendered catheterization of the ureters in the female rather easy. But the efforts made in the male by Brenner, Poirier, and Boisseau du Rocher have by no means proved executable with any degree of security.

"Nitze's cystoscope for catheterizing the ureters, roughly described, is a small-sized (Charrière 19) cystoscope running through and easily turning in a larger tube. The latter is open at the outer angle of the knee of its Mercier bend. Near the visual end of the outer tube a small, short one enters it. This is just sufficiently large to permit the catheter for the ureter to pass through it and the larger tube, from the tip of which it can be protruded. It is inserted into the bladder closed entirely. When in place, the knob on the outer rib, indicating, as with other cystoscopes, the position of the beak, the inner tube, or small cystoscope which contains the lamp and prism, is pushed forward, and the whole apparatus turned until the mouth of the ureter is clearly seen through the visual end. The catheter is then propelled by the fingers until its point enters the mouth of the ureter. This is the most difficult part of the whole procedure. Once accomplished, the catheter can be easily pushed into the ureter, on toward the pelvis of the kidney. Then holding it firmly in place, cutting off the light, drawing the inner cystoscope into the outer tube, the metal part of the apparatus can be withdrawn, leaving the catheter in the ureter, projecting through the bladder and out of the urethra. In normal cases the urine, free from vesical secretions, will then spurt or drip from the orifice of the catheter, two to five drops every minute, minute and a half, or two minutes.

"Incidentally it may be mentioned here that the inner tube, before described, can be used for cystoscoping children.

"Casper's cystoscope for catheterizing the ureters is a somewhat

Dr. Meyer's reputation for honor and justice is as well known as his superior surgical skill; therefore he would not even care to appear as the first in America to demonstrate catheterism of the ureters by Casper's instrument had he been aware of my having preceded him by a little over six months. I claim no credit whatever for this; it was merely an accident that, having been taught the rudiments of cystoscopy by both Nitze and Casper, I was the first to bring their new ureter cystoscopes to America.

There are, however, some points upon which my experience does not wholly agree with that of Dr. Meyer.

First as to Nitze's and Casper's instruments: The former is much smaller and in many cases much more easily manageable. Yet, being prepared to catheterize the ureters, I would not like to be without either, as there are cases in which failure attends the use of one, when immediately thereafter the other succeeds.

With all due modesty I beg to call attention to the little rubber nipplelike attachment marked E in Dr. Meyer's excellent illustration of the instrument. Casper, when perfecting his instrument, did not succeed in causing the fluid to be retained in the bladder, owing to the catheter canal necessarily being wide enough to permit the catheter to slide through it easily. I suggested to him the advisability of simply slipping over the distal (external) opening of the catheter canal a bit of rubber tube small enough to grasp the catheter. The suggestion proved successful in use, and the author doubtless would have given me credit for the idea had he not forgotten it in the bitter controversy which arose between him and Dr. Nitze.

I find nowhere in Dr. Meyer's paper a mention of the fact that while holding the mouth of the ureter in view, the catheter will, despite all precautions, and often with the most perverse obstinacy, refuse to enter. Then I find that by gently twirling its protruding end either to the right or left, as the case may require, its course can be corrected to meet such abnormity in the ureter's insertion into the bladder as may have caused the difficulty.

I am surprised to observe that Dr. Meyer regrets the insterilability of cystoscopes, as I find no difficulty whatever in accomplishing this essential to both Casper's and Nitze's cystoscopes, in Nitze's ingenious cystoscope sterilizer. I use it for their instruments for catheterization of the ureters, for Nitze's ordinary cystoscope, his irrigation cystoscope, his evacuation cystoscope, and Winter's (female) cystoscope. None of the cement of their lenses has suffered in consequence of sterilization.

If certainly must be a *lapsus calami* when Dr. Meyer says of Nitze's ureter cystoscope that it "is so far nowhere for sale." On page 40 of C. G. Heynemann's Catalogue (Leipzig, Erdmannstrasse 3) the instrument is depicted and the price marked complete at *M.* 120 ($30). F. Alfred Reichardt & Co., 27 Barclay Street, New York, are completing arrangements to supply the United States with Heynemann's instruments.

To do away with any misapprehensions regarding the purpose of these hasty notes, I must insist:

1. That there is no object in comparing Nitze's and Casper's ureter cystoscopes. They are certainly distinct instruments, one often proving most satisfactory when from any individual peculiarity the other fails. I should not consider myself safe without both. The personal obligation under which I am to both Dr. Max Nitze and Dr. Leopold Casper prevents my entering into the question of priority of invention which produced such an unfortunately acrimonious dispute while I was in Berlin. The solution of this question is, I think, very gracefully reached by Dr. Meyer when he says: "It seems we have a right to call *this* new important instrument 'Casper's ureter cystoscope.'"

2. There is not the slightest intention herein of criticising Dr. Meyer's able work, or of inviting a controversy. If this leads the many friends of the *New York Medical Journal* to read Dr. Meyer's article a second time, much benefit to many sufferers from obscure renal and ureteral cases will doubtless result.

242 West Forty-third Street, *March 22, 1896.*

more complicated and heavier instrument than Nitze's. Its beak is doubly curved, somewhat like Lohnstein's modification of Nitze's instrument. The lamp and terminal prism are considerably larger than Nitze's, for which the author claims a wider visual field. The ocular end of the shaft has an extra set of prisms in the optical apparatus, which places it beneath the shaft. Thus the opening directly into the shaft is left free for the entrance of the catheter. When it has penetrated the ureter to the desired distance, a bit of rubber tubing at the orifice of its entrance is removed. Then a ring at the upper part of the instrument is drawn toward the operator. It is attached to a thin metal slide, which forms the upper third of the catheter canal. On removing thus entirely, the catheter is held by the ureter above; the part lying in the bladder is then freed, and supporting the end projecting from the meatus, the cystoscope is withdrawn. Thus the catheter is left *in situ.*

"4. *The Intravesical Removal of Tumors.*—Unfortunately, through circumstances unnecessary to relate here, the manufacturer of Nitze's instruments could not provide me with an operating cystoscope in time to demonstrate it at this meeting. I am therefore obliged to crave your indulgence for being compelled to use a drawing, which, at best, is an unsatisfactory substitute.

"It is a cystoscope with wires to snare off tumors within the bladder. The wire can be used cold, by mere constriction, or it can be rendered incandescent to sear as it strangulates. The tip of the instrument has a small platinum coil which can be rendered incandescent also, and thus used to cauterize the bases of tumors, arrest hæmorrhage, etc. The instrument also has diminutive forceps, by which small fragments of tumors, or stones, or other foreign bodies can be grasped and withdrawn."

VENTRO-HYSTEROPEXY.

By J. O'CONOR, M. A., M. D., B. Ch., Trinity College, Dublin, senior medical officer, British Hospital, Buenos Aires.

During the past twelve months I have performed abdominal fixation of the uterus for prolapse eight times, and I wish to bring more fully under the notice of the profession the ease and certainty with which this operation may be executed, also the advantages of fibro-serous approximation, so ably advocated by Mr. Greig Smith.

Only this morning I have had an opportunity of realizing the danger in any one's attempting to fix the uterus to the anterior parietes without opening the abdominal cavity. I particularly refer to a method of intra-uterine ventrofixation recommended by Mr. Shober. On opening the

peritoneal cavity, the omentum covered anteriorly the lower abdominal viscera in all directions, notwithstanding the fact that my two-inch incision extended to within half an inch of the pubes. If I had attempted to fix the uterus by a needle passed through the womb without opening the peritonæum, to a certainty I should have included the omentum; therefore, with this experience—and I have seen the same in other cases—I have strong objections to working in the dark.

In each of the eight cases there has not been the slightest post-operative complication; in all there was union by first intention; in no instance did the temperature exceed 100°, and no recurrence of the trouble has been reported; and, although I never order an abdominal belt to be worn afterward, no ventral hernia has occurred. To my mind, the latter mishap is due to deficient care in suturing the parietal wound. Of course, a short period only has elapsed, therefore these latter observations can only be tentative.

In a way, I feel thankful that I have not as yet been afforded the opportunity of examining the class of adhesion that takes place, and none of my patients, so far as I know, have tested the same by becoming pregnant; as some of them are young, doubtless the test will be applied.

The operation is carried out as follows: The patient, having been "acclimatized" to hospital life for a fortnight, during which time sundry repairs are undertaken—curetting of the endometrium, excision of the cervix, and colpoperinæorrhaphy, if necessary—the bowels are well cleared out with repeated doses of magnesium sulphate. On the day before the operation the pubic hair is shaved off, and the skin of the abdomen scrubbed with soda, soap, and hot water; then washed with turpentine, and a large piece of lint, soaked in 1-to-500 corrosive sublimate, applied and fixed on for the night by antiseptic wool and a bandage.

On the morning of the operation a large soap-and-water enema is given, and immediately before the patient is brought into the operating room the urine is drawn off.

The patient having been chloroformed, the night's dressing is removed, and the skin all round the field of operation is again scrubbed with a sponge soaked in turpentine, and, lastly, thoroughly washed with Watson Cheyne's strong solution.

1. An incision two inches in length is made in the median line, extending to within half an inch of the pubes. All bleeding must be stopped before the peritonæum is picked up with a dissecting forceps and opened. A few pressure forceps are attached to the cut edges of the peritonæum; these help greatly in after-manipulations.

2. The left index finger is passed down below the intestines and omentum to the uterus, with the palmar surface hooking the former upward. With the tip of the finger steadied on the womb, I pass down a Muzeux forceps on the dorsal aspect of the finger, seize the uterus, and pull it up to the wound.

3. An assistant now takes hold of the forceps; the presenting surface is scarified with the point of a scalpel; some trifling oozing takes place, which is easily arrested by sponge pressure.

4. At the lower angle of the wound a curved needle, threaded with silk, is passed from without inward through the rectus muscle and transversalis fascia, the peritonæum being retracted by pressure forceps (previously applied); the needle is then passed, for at least a quarter of an inch in depth, into the uterus, and made to emerge about half an inch from the point of entry. The peritonæum, on the opposite side, is next held back while the needle is passed from within outward through transversalis fascia and rectus muscle. In this manner three sutures, at intervals of a third of an inch, are inserted. Any bleeding from the needle punctures is arrested by sponge pressure.

5. The peritonæum is again held back on each side, and these sutures are tied firmly and the ends cut off. (Note: Care must be taken not to tie too tight, lest the silk sutures should cut through the uterus; firm approximation is all that is necessary.)

In this manner the serous covering of the uterus is brought into intimate connection with the transversalis fascia and recti for a space half an inch in width and one inch in length.

6. Before closing the upper inch of the wound it is desirable to pass a small sponge, held by torsion forceps, into the peritoneal cavity, in order to remove any blood or clot that may be present. The peritonæum is next closed by a continuous fine silk suture; it is well to pass the first stitch through the peritonæum on the side next the operator, then through the uterus, and lastly through the peritonæum on the opposite side. In this way the peritonæum is brought into accurate apposition with the serous coat of the uterus, and this prevents a subsequent site for ventral hernia.

The recti muscles in the upper portion of the wound are then brought together by another continuous fine silk suture, and the skin wound is closed in the same manner. Iodoform gauze is applied. The first dressing is removed on the eighth day, and the suture on the twelfth. The patient is allowed out of bed on the fourteenth day.

There is one essential in the closure of this or any abdominal wound, and that is, no pocket must be left for the accumulation of serum or blood, for where these factors are, thither staphylococci, etc., gather together—nay more, thrive.

DISPLACEMENT OF THE SCAPULA FROM THE CLAVICLE.

By J. O'CONOR, M. A., M. D., B. Ch., Trinity College, Dublin, senior medical officer, British Hospital, Buenos Aires.

A. E. T., aged forty-one years, sailor, admitted into British Hospital on January 7, 1896, suffering from an accident which occurred fourteen days prior to admission, caused by his having been "thrown over the wheel."

On admission, he complained of pain in the left shoulder and inability to raise his arm; the objective symptoms were a distinct prominence of acromial end of clavicle, with depression of shoulder; the arm hung by the side. When moving about, he supported the left forearm, like one suffering from fractured clavicle. A futile attempt was made to reduce the dislocation by forcibly pressing downward and forward the displaced end of the clavicle, while an assistant dragged the shoulder outward.

The nature of the injury and the probable diminution in utility of limb having been explained to him, he consented to have an operation performed.

On January 10th, the patient having been chloroformed, a curved incision four inches in length was made, beginning at about the junction of the middle and outer thirds of the clavicle, passing directly outward over the displaced end of this bone, and ending about an inch externally to the articular surface of the acromion. By this means the end of the collar bone and the claviculo-acromial articulation were readily exposed.

The next step was to free the outer end of the clavicle from surrounding integuments, in order to obtain sufficient room for its articular surface to be removed with a chisel and mallet. Care was taken to place a broad copper retractor beneath, in case the chisel should slip; the articular end was sliced away for a third of an inch. The acromial portion of the joint was next attended to with Liston's bone scoop, the cartilage removed, and the bone freely scraped.

Two holes were then drilled through the acromion, about half an inch apart, and through the corresponding portion of the clavicle. Some trouble was experienced in passing wires through the acromion on account of the inability to tilt the shoulder sufficiently outward and downward so as to expose its lower surface; but this was as nothing compared to the next difficulty—viz., the drawing down of the clavicle into its normal position. However, by the persistent efforts of one assistant drawing the shoulder outward and another pushing the displaced end of the clavicle downward, the bones were eventually approximated sufficiently for me to twist the wire sutures tight, and when they were thus fixed there did not seem any further tendency to displacement.

The wound was brought together by interrupted silkworm-gut sutures; a small opening was left in the centre into which a small roll of iodoform gauze was inserted as a drain. Iodoform-gauze dressing having been applied, the limb was bandaged in the same position as for fractured clavicle.

On the third day the dressings were removed and the gauze drain was taken out; it was thoroughly soaked with blood. As the oozing did not appear to have quite ceased in the depth of the wound, another roll was inserted.

On the seventh day the wound was dressed for the second time. The gauze was again found saturated with blood, but, as the bleeding seemed to have stopped, the gauze was dispensed with and iodoform dusted in.

On the eleventh day it was dressed again. Union by first intention having taken place, the sutures were removed and he was allowed out of bed. The temperature did not once exceed 99° F. after the operation. All dressings and bandages were left off on the twenty-first day, excepting that the patient was made to carry his arm in a sling. On the twenty-fourth day he was permitted to begin moving the shoulder, and was discharged on the thirty-first day, sound union, without the least deformity, having taken place.

He could raise his arm from his side to an angle of seventy-five degrees, and, to use his own words, he was "getting it up more each day."

The question now arises, Will the commercial value of the limb be greater, minus a clavicular acromial joint, than with the dislocation unreduced? I regret that his occupation did not admit of his making a longer stay in Buenos Aires in order that I might see the ultimate result. Anyhow, I feel satisfied that the operation is a rational surgical procedure, yet by no means so easy in execution as one might expect.

I wish to acknowledge the kind assistance of Dr. Shadbolt and Dr. Cruickshank.

THE HÆMORRHOIDAL FLUX:

ITS PECULIAR CHARACTERISTICS, TRUE SOURCE, DIAGNOSIS, AND TREATMENT.

By WILLIAM BODENHAMER, M.D., LL.D.,
NEW ROCHELLE, N. Y.

The writer has been induced to select for discussion this unique hæmorrhoidal bleeding because of its frequency, its obstinacy sometimes, its great abundance often, its occasional very serious consequences, and its peculiar character. He will therefore attempt to give on this occasion a brief exposition of some of the principal points involved in it, such as its real origin—whether it is venous or arterial, or both; whether it proceeds directly from veins or from arteries, or only from the venous or arterial capillaries; whether it is always venous; whether it is analogous to the menstrual flux; whether it is salutary or noxious, and whether it should in any case be suppressed or not, etc. These are some of the salient points for consideration.

Bleeding from the hæmorrhoidal vessels, a result sometimes or a symptom of the hæmorrhoidal disease, has in all ages attracted the greatest attention, and it was doubtless in consequence of this phenomenon that the name αἱμορῥοίδες was given by the Greeks to the disease so called. It is highly important, however, to make the distinction between this often, as it were, spontaneous hæmorrhoidal flux and the hæmorrhoidal disease, for they are by no means identical.

Hæmorrhoidal bleeding, like all other hæmorrhages, may be either active or passive; when it occurs as a result of the hæmorrhoidal disease it is generally passive. There is, however, nothing more variable or more diversified than the hæmorrhoidal flux, with regard either to periodicity, to quantity, or to the circumstances under which it takes place. The simplest form by which it manifests itself sometimes is in the primary stage of the hæmorrhoidal affection, when the dilatation or turgescence of the vessels is unattended by either hyperæmia, congestion, lesion of any kind, or premonition. Such a hæmorrhage occurs simply as an exhalation from the capillaries of the mucous membrane of the rectum. The writer has known many persons to lose several ounces of blood from the rectum while evacuating the bowels, without experiencing any uneasiness or pain either before or subsequent to the discharge, and also without a previous or a subsequent hæmorrhage. Such cases have been reported by authors. Patients who suffer from the hæmorrhoidal disease are sometimes subject to hæmorrhoidal bleeding at intervals of a few days, a week, a month, or even longer. Occasionally it seems to assume a periodical character, returning with the week, the month, the season, etc. As a general rule, however, the bleeding ceases in the course of several days, but sometimes it continues more or less for months, and in some instances it

kes place in moderation for a lifetime. Cases, too, are ported in which it is said that the bleeding has occurred it once in a long life. The amount of blood lost varies om a few drops to a drachm or an ounce, and even a ound or more has been known to have been discharged at ie time. The bleeding sometimes occurs during defecat- g efforts, at other times preceding them, but it most usu- ly follows the passage of fæces.

Smetius speaks of a young man who for several years id a hæmorrhoidal flux every spring (*Miscellanea medica*, b. i, cap. iv, epistol. 9, p. 222, 4to, Frankfurti, 1611).

Schenfelder reports similar cases (*Historiæ enarra- ones medicæ*, hist. xii, p. 45).

Stegmann also reports like cases (*Historia naturalis riosa*, dec. iii, ann. 4, observ. 102).

Alberti cites the case of a young man in whom the æmorrhoidal flux occurred twice a year regularly (*Acta aturæ curiosorum*, vol. i, observ. 217).

Fortis mentions the case of a lawyer who had a hæm- rrhoidal seizure every three or four months (*Con- ultationes medicæ*, tom. ii, cent. 2, consult. 69, 4to, Patav, 668).

Leucorrhœal Flux.—Besides the hæmorrhoidal flux, hich is sanguineous, there sometimes also takes place om the rectum a serous, sero-mucous, or leucorrhœal flux, hich has from its color, strange to say, been denominated *hite hæmorrhoids* by some able and distinguished authors, s follows: Alberti (*Dissertatio de hæmorrhoidibus albis*, Halæ, 1717), Baumer (*Dissertatio de hæmorrhoidibus mu- osis earumque sympathia cum asthmate mucoso*, Giessæ, 776), Seligmann (*Dissertatio de hæmorrhoidibus albis in niversum*, Goettingæ, 1782). M. de Montègre, *hémor- oïdes blanches* (*Des hémorroïdes ou traité analytique de utes les affections hémorroïdales*, p. 49, 8vo, Paris, 1830). he distinguished Professor M. Richet, of the Hôtel Dieu at Paris, in a clinical lecture in 1874, singularly nough, advocated the propriety of the appellation *hé- orrhoïdes blanches* (*Irish Hospital Gazette*, July 1, 1874).

This whitish discharge, like the sanguineous, sometimes ccompanies the hæmorrhoidal disease, but by no means ecessarily, inasmuch as it may or may not depend upon hat affection. When it accompanies that affection the resumption is that it is caused by the irritation of the nucous membrane of the rectum which the hæmorrhoidal lisease induces; indeed, it is always the effect of irritation r chronic inflammation of that membrane, from whatever ause induced, and constitutes in reality what we term *atarrh of the rectum*. It is an exudation from or a secre- ion of the mucous membrane, furnished by the exhalants, nd is variable as to quantity, consistence, and appearance, eing sometimes so very copious as to cause a continued ripping or oozing from the anus, and soiling and staining he linen of a patient, or it passes out of the anus suddenly n flakes on the first effort at stool or to pass flatus; even fforts at urination, as well as coughing and sneezing, will ometimes cause more or less of a discharge of it. The lischarge is sometimes whitish and thin, like gum-arabic vater, at other times it is clear and tenacious like the white of an egg, and again it has the exact appearance and consistence of frog's spawn. The writer has occasionally seen it of a pale pink color, resembling currant jelly.

The writer would observe here that whenever the white flux accompanies the hæmorrhoidal disease, which it sometimes does, it, as a general rule, immediately follows the sudden cessation of the hæmorrhoidal flux, and in such cases seems to replace it, as it were, or to be a transformation of it, as they are scarcely ever known to coexist. In some instances the change of color is gradual from florid red to white, and *vice versa*.

A clear distinction in the leucorrhœal flux, as in the sanguineous, must be made between the hæmorrhoidal disease and it, for, to repeat, it is not the hæmorrhoidal disease, nor is it indeed any other disease, but a sign or a symptom merely of a pathological condition of the mucous lining of the rectum.

The Source of the Hæmorrhoidal Flux.—That the true origin of the hæmorrhoidal flux may be fully understood, the writer will first proceed to give a brief description of some of the most striking phenomena of the incipient stage of the hæmorrhoidal disease. He will begin by stating that a preternatural fullness or a decided turgescence of one or more of the arterial and venous capillaries at the inferior extremity of the rectum occurs sometimes, and is the first manifestation of a morbid action in them, provoked by some irritation or excitation, either in immediate or in remote parts. This vascular turgidity of the arterial and venous capillaries, from whatever cause, is the result, first, of a morbidly relaxed condition of their coats, by which the capacity of these vessels is much increased; and, second, of a sanguine fluxion to them, which preternaturally fills, distends, and enlarges them. The relaxed and asthenic condition of the walls of these vessels permits larger currents of blood to enter into their cavity than normal, the fluid being attracted from its natural channel to these vessels solely in consequence of the vacuum occasioned by their enlarged calibre, and not, as some declare, by the *vis a tergo*, regardless of the previous morbid condition of the parts themselves; for it is obvious that when the natural tonic contraction of these vessels obtains, less blood can enter into them than when this contraction is replaced by a morbid relaxation of their walls; of course, more blood will enter into these vessels as the resistance offered by them is lessened, the blood always flowing in the direction of the least resistance. It will therefore appear evident that the morbid condition of the vessels must exist first, then the blood movement to them as a consequence of it, and, lastly, the dilatation or turgescence of them as the result of the sanguineous movement into them. The morbid relaxation of these vessels is the immediate effect of some continued irritation or excitation of their nerves, and that, sooner or later, induces inflammation by exhausting that nervous influence which gives these vessels their strength and force; they thus become weakened, lose their contractile power, allow of overdistention, and finally fall into a state of congestion. The arterial and venous capillaries are especially, from their structure, capable of much greater dilatation and enlargement than either the arteries or the veins, having but a single homogeneous coat or membrane to resist

undue force; whereas the arteries and the veins are better protected, for besides such a coat they have outside of it a layer of muscular fibres and a third coat over these. The peripheral vessels, too, are very easily excited or irritated, and undue stimuli, from whatever source, cause relaxation, soon followed by fluxion, hyperæmia, or congestion.

With special regard to the capillaries, we know that, unless relaxed and enlarged by some efficient cause, they are too small to admit the red corpuscles of the blood into them; when morbidly relaxed, however, they are traversed by a fluid differing essentially from that to which they naturally give passage. Indeed, the peripheral or minute vessels of the rectum and anus in their normal state give passage only to the uncolored or white corpuscles of the blood, and can scarcely be perceived, but when morbidly relaxed and turgid they are often exceedingly and disproportionately large, and appear through their thin and almost transparent parietes as if filled with a colored artificial injection.

It will be perceived that the principle which the writer has endeavored to explain does not differ materially from the long established theory that whenever a stimulating substance is applied to any part of the body, either externally or internally, a sense of irritation is first experienced at the part itself, and then an increased afflux of the blood takes place to the vessels of the same. This fluxion, or blood movement, is in accordance with the old acknowledged axiom, "*Ubi stimulus, ibi irritatio; ubi irritatio, ibi fluxus.*"

Now, from what has been said of the incipient stage of the hæmorrhoidal disease, we can the more readily understand the true source of the hæmorrhoidal flux. It is neither directly from the arteries nor from the veins, as many believe, but from the intermediate order of vessels, the arterial and venous capillaries, which form in effect the transition from the one to the other. It is from the network of the arterial and venous capillaries that in reality the bleeding, when it occurs in the hæmorrhoidal disease, proceeds. In such a case the appearances observed after death are that the hæmorrhage had not proceeded from any large or particular vessel, but evidently from the whole series of the capillary extremities opening upon the surface of the mucous membrane of the rectum; for it is at the inferior extremity of this organ that the numerous vessels traverse the entire thickness of it, interlacing and uniting in a thousand ways, and forming there the centre of a very compact plexus of sanguineous vessels.

In the early stage of the hæmorrhoidal disease, before the development of regularly organized tumors, if an examination is made on the living subject, when the affected parts are protruded in making defecating efforts, the blood will be seen to issue *guttatim* from a more or less extended surface of the mucous membrane of the rectum, producing an appearance similar to that which results when in the dead subject considerable force is applied to the piston of the syringe in filling the arteries of the same part with warm water or a very thin colored injection.

Those who maintain that the hæmorrhoidal flux proceeds directly from the veins instead of from the venous capillaries differ but little with the ancients, who believed that the blood evacuated by what they denominated hæmorrhoids came from the *vena portæ*, and was charged with the elements of bile, and possessed the characteristics which approximated it to what they denominated *atra bilis*.

Now, to prove positively that the hæmorrhoidal flux does not come directly from the hæmorrhoidal arteries or from the veins, but from the extremities of the arterial and venous capillaries, it is, as before observed, only necessary in the dead body to inject steadily the inferior mesenteric artery with a thin colored fluid, when it will appear upon the surface of the mucous membrane of the rectum in small drops.

In the hæmorrhoidal disease, when bleeding occurs, its passage is effected differently. In the incipient stage of that disease it is generally effected by exhalation or exudation through the extremities of the morbid capillary vessels, such as takes place from all vascular mucous surfaces; sometimes, however, it appears to flow from one or two points more than from the rest, so that when the patient makes straining efforts to evacuate the bowels the blood will be seen to spin out in a fine, continuous stream, as if from ruptured vessels, which doubtless results from the expansion or the relaxation of one or more of the pores of the mucous membrane. In such a case, if the spot from which the blood issued is dried and examined, no solution of continuity will be discovered even by the aid of powerful glasses.

In the advanced stage of the hæmorrhoidal disease, after organized tumors have been developed, the blood sometimes issues from them *per saltum* through the dilated extremity of a capillary tube, the orifice of which can sometimes be plainly seen and explored by means of a delicate probe. If an old bleeding hæmorrhoidal tumor is carefully examined, the dilated extremity of a capillary vessel will almost always be found in it, and from that the blood, when the tumor is protruded, issues in jets.

The Constituents of the Hæmorrhoidal Flux.—The writer has already plainly shown the order of vessels which furnish the hæmorrhoidal flux, and the question now arises, What is the composition of it? Is it always either arterial or venous, or is it a mixture of both? The writer is decidedly of the opinion that in the early stage of the hæmorrhoidal disease the flux, when it occurs, is almost always purely venous; but in the advanced stage, when tumors exist, the flux, in some very rare instances, is purely arterial. In the great majority of cases, however, the two fluids are mixed, with the venous greatly in excess. Some authors maintain that, because the blood from protruded hæmorrhoidal tumors issues out in jets of a bright-red color, it is always arterial; others declare that it is always venous; as to the jets and the color, they account for those phenomena otherwise. M. Delatour relates an instance in which he observed the venous blood to issue from hæmorrhoidal tumors in jets out of orifices which he plainly saw. He says: "One of my patients had many large hæmorrhoidal tumors, which ejected the blood in spouts whenever the anal sphincters contracted. I observed," said he, "at this moment, that the hæmorrhoidal veins were so much compressed that the blood came out of the tumors in jets

through dilated pores distinctly seen" (*Histoire philosophique des causes des hémorrhagies*, p. 300, obs. 212, 8vo, Paris, 1814).

Mr. Cripps, upon the same subject, says: "It is a matter of some interest to consider the source of this bleeding. The fact of the blood escaping in jets has led many high authorities to regard it as arising from some arterial twig. With due deference to such eminent authorities as Brodie and Van Buren, I am of opinion that they are mistaken, and I do not believe that it ever comes from the arteries, but the jet is caused by its being forced as a regurgitant stream through a small rupture in a vein by the powerful pressure of the abdominal muscles. If it really came from an artery, why should the jet only appear when the abdominal muscles act?" (*On Diseases of the Rectum and Anus*, p. 69, 8vo, Philadelphia, 1884.)

The writer, during many years of active practice, has seen, under various conditions and circumstances, numerous cases of prolapsed internal hæmorrhoidal tumors, in some of which the protrusion only occurred while defecating efforts were being made; in others, by long standing upon the feet, by stooping, and by lifting heavy weights, and sometimes even by coughing, by sneezing, or urinating. Some of the tumors were discharging blood and some were not; the internal bleeding tumors, however, scarcely ever bled unless when protruded. From those that bled, the blood escaped either in rapid drops, in a fine continuous stream, or in jets. The writer always believed, and still more firmly believes, that in those instances in which the blood issues *per saltum*, it proceeds from an artery or from an arterial capillary. The jets and the bright-red blood prove this. The blood escaping *guttatim*, or in a fine continuous stream, and of a dark color when seen issuing, is positive evidence that it proceeds from a vein or from a venous capillary. In many of these cases the protrusion of the tumors was not at all the result of the defecating efforts; consequently, the jets could not have been caused by the contraction or compression of the anal sphincters, as M. Delatour says; nor from the action and pressure of the abdominal muscles, as Mr. Cripps declares; for in such cases all the muscles engaged in the act or process of defecation are entirely quiescent, and yet, while the tumors remained prolapsed, the blood continued to escape either in jets, in drops, or in a continuous stream. The writer therefore has come to the conclusion and belief that these two distinguished surgeons are mistaken, and he also is of opinion that they greatly err by declaring that the blood from internal hæmorrhoidal tumors comes directly and only from the veins, and is, of course, always venous and never arterial. This was the doctrine of the ancients, who believed that the hæmorrhoidal flux came solely from the veins of the anus or inferior portion of the rectum, and not from any other source, they being ignorant of the true function of the arteries.

Hippocrates declares that the veins of the anus are accustomed sometimes to pour out blood. He says: "De venis in ano sanguinem fundere solitis" (*De Hæmorrhoidibus liber*, Foësio, vol. i, p. 891).

Galen generally designated under the name *hæmorrhoids* a flux or a flow of blood from the veins of the inferior portion of the rectum, which veins, says he, are furnished at their extremities with cotyledons, like those of the uterus during gestation. He makes a distinction between active hæmorrhage in general and that which proceeds from hæmorrhoids in this, that the former is an abundant effusion of blood, while the latter is only a flow of blood which takes place little by little (*Definitiones medicæ liber et De Compositione medicamentorum localium*, lib. ix, 8vo. *Galeni opera omnia*, græcè et latinè a Kühn, Lipsiæ, 1821.)

It will be perceived that Galen used the term *hæmorrhoids* to denote a passive, not an active, hæmorrhage, and that he seemed to be aware also that the bleeding did not proceed from a rupture or a laceration of the vessels of the rectum, or from erosion or ulceration of the mucous membrane of the same, but by an exhalation, exudation, or by a true *stillicidium*, from the mucous surface.

Consequences of the Hæmorrhoidal Flux.—In cases of the long continuance of this flux, and especially when it becomes habitual, the constitution sooner or later suffers, and a train of grave phenomena arises, the result of which is often a profound anæmia. The complexion of the patient becomes sallow and dingy, and presents a peculiar tallowy or waxy appearance; his countenance is always pale, heavy, and bloodless; his eyes are puffy; his lips and gums are blanched; his tongue is pale and semitransparent; his pulse is quick, weak, and jerking; his breathing is difficult, and especially when ascending steps; the heart's action is easily excited, and the organ palpitates violently on either slight bodily exertion or mental agitation; he frequently suffers from headache, especially when sitting up, which is almost always entirely or partially relieved by the horizontal posture; his sleep is disturbed; his temper becomes peevish and irritable; he is listless, and a deficiency of physical and mental energy supervenes; and finally, as the result of his anæmic or bloodless condition, œdematous or watery swellings of the extremities take place, etc.

Remarkable Cases of Hæmorrhoidal Flux.—Many cases are reported by authors in which the hæmorrhoidal flow has been represented as extraordinarily excessive, the quantity of blood escaping being sometimes enormous, so much so that it would appear almost incredible. A large number of well authenticated cases might be cited to prove that death has often been caused by the mere loss of blood from the hæmorrhoidal flux. The source of the active hæmorrhage is the same as that of the passive; there is no rupture of vessels; the blood transudes through the vascular mucous lining of the rectum and pours forth from its whole surface, but usually from some points more than from others. Much the same takes place in hæmorrhage from the lungs, from the nose, etc., no vessel being torn, but blood passes freely through the morbidly relaxed membranous pores or tubes.

The writer will now present some of the instances of extraordinary hæmorrhoidal flux reported by authors; they are, of course, extreme and rare cases, and are doubtless greatly exaggerated, for patients are exceedingly apt to imagine the bleeding to be much more profuse than it in

reality is, from the alarm which is generally caused by the mere sight of blood. The great show, too, which even a small amount of blood makes on the linen and clothes, and its admixture sometimes with other fluids, also imposes on their imagination and inexperience. Indeed, many of these reported cases of rectal hæmorrhages may have been from other sources than the hæmorrhoidal vessels, and consequently could not be considered the hæmorrhoidal flux.

Montanus, according to the report of Schwevecher, saw a patient who had passed two pounds of blood daily for forty-five successive days and finally recovered (*Append. Consilior Montani*, p. 59, 12mo, Basiliæ, 1583).

Cornarius mentions the case of a nobleman who, after drinking freely of Hungarian wine, lost two pounds of blood from the nose and six pounds on each of the four following days from the anus. He nevertheless, it is said, got well without any remedy (*Observationum medicinalium*, obs. xxvi, 4to, Lipsiæ, 1599).

Lanzoni cites the case of a priest who daily passed a pint of blood *per anum* (*Consultationes medicæ*, consul. 97. In *Opera omnnia medico-physica et philologica*, tom. xi, p. 203, 4to, Lausannæ, 1738).

Panarola knew a Spanish nobleman who for forty years rendered each day a pint of blood *per anum*, and at the same time enjoyed perfect health (*Observationes medico-chirurgicæ*, pantect. xi, obs. 46).

Pomme gives the case of a man, thirty-six years of age, of an atrabilious temperament, who for a long time had been subject to an excessive hæmorrhoidal flux, for which he tried many remedies without obtaining relief. At length, having adopted the idea that it had a venereal origin, he underwent an antisyphilitic course of treatment, in consequence of which the flux disappeared. However, he was attacked with severe symptoms of cholera, when the hæmorrhage reappeared. During a month he lost nearly a pound of blood daily, which was followed by colic and by pains of the face and of the extremities. By a generous diet, nutrient injections, and cold baths the hæmorrhage was arrested and exercise on horseback rendered him convalescent (*Traité des affections vaporeuses des deux sexes*, 8vo, Lyon, 1765).

Harris saw a widow of meagre frame and of bilious temperament who lost upward of four pounds of blood from the hæmorrhoidal vessels in a few hours during the night, and nearly died from exhaustion. The bleeding, however, was arrested by the application of cloths soaked in spirits of wine (*Observationes de morbis aliquot gravioribus*, obs. x, 12mo, Amstelodami, 1715).

Borelli mentions the case of a tailor who lost as much as ten pounds of blood at a time. This man was nevertheless vigorous and of a jovial disposition. Borelli diminished his hæmorrhoidal flux by means of the syrup of roses (*Historiarum et observationum medico-physicarum centuria*, obs. med. xliv, 12mo, Castri, 1653).

Spindler saw a potter who, after having suffered for a week with pain in the loins, was seized with violent colic and severe vomiting. A cathartic was administered, which relieved him, but he passed from twelve to fourteen pounds of vermilion-colored blood from the anus in twenty-four hours, each dejection being accompanied by a slight colicky pain. After many remedies were tried in vain, the hæmorrhage was arrested by a stimulating injection (*Observationum medicinalium centuria*, obs. med. xliv, 4to, Francofurti, 1691).

Hoffmann says he saw a widow, fifty years of age, of a very full habit, who in consequence of an indolent course of life and full living was for eight years subject to hæmorrhoids; at the same time she continued to menstruate. The uterine discharge having ceased, and she being bled but once, she was seized toward the autumnal equinox first with lassitude and then with coma, for which she was bled in the foot and took cold water in large quantities without any benefit. At the end of two days, however, a stimulating lavement was administered, when an excessive flux of blood occurred, amounting in twenty-four hours to more than twenty pounds, the consequence of which was the cessation of the coma. Her strength gradually returned by the employment of invigorating and gently astringent remedies, together with enemata of cold water (*Dissertatio de immoderata hæmorrhoidum fluxione*, Halæ, 1730).

Mr. Calvert reports the two following cases of excessive hæmorrhoidal bleeding: "A middle-aged woman of Manchester Infirmary, in whom the hæmorrhoidal discharge had been long suppressed, was seized with colicky pains, with a sensation of weight about the loins and sacrum; an enema was given which brought away some liquid fæces, and soon after a discharge of bloody fluids amounting to more than three chamber-potfuls in less than two hours. She was dreadfully reduced in consequence, but the pains subsided and after some time she regained her former strength."

"The second case was in a young woman, an out-district patient of the same hospital, who was affected with pain in the head and loins, symptoms of general fever, with tenesmus and sympathetic irritation of the bladder. In this state she continued for some days, when the hæmorrhoidal discharge, to which she had been subject, returned, and more than a pint of blood was daily voided for near a fortnight. The pain of the head and loins, with the other symptoms, disappeared with the recurrence of the discharge, and were succeeded by a small, feeble pulse, œdema of the face and extremities, oppression at the region of the stomach, and great prostration of strength. The discharge was finally stopped by the vigorous use of spirituous and astringent injections, with such other means as are generally used when affections of this nature are continued from debility" (*A Practical Treatise on Hæmorrhoids, Strictures, and other Important Diseases of the Rectum and Anus*, p. 16, 8vo, London, 1824).

The Emperor Peter III of Russia is represented by her Imperial Majesty, Catharine II, his wife, as having died of an excessive hæmorrhoidal flux to which he had long been subject. History, however, whether true or not, gives a different version of this affair. It represents him as having died of poison and suffocation at the hands of assassins. This occurrence is said to have taken place on the 17th of July, 1762, and on the next day her Imperial Majesty issued a proclamation in relation to this event, of which

the following forms a part: "By the grace of God, Catharine II, Empress and Autocratrix of all the Russias, to all our loving subjects, etc., greeting: The seventh day after our accession to the throne of all Russias, we received information that the late Emperor Peter III, by means of a bloody accident on his hinder parts, called hæmorrhoids, to which he had been formerly subject, was attacked with a most violent griping colic. That, therefore, we might not be wanting in Christian duty, nor disobedient to the divine command, by which we are enjoined to preserve the life of our neighbor, we immediately ordered that the said Peter should be furnished with everything that might be judged necessary to prevent the dangerous consequences of that accident, and restore his health by the aids of medicine. But, to our great regret and affliction, we were yesterday evening apprised, that by the permission of the Almighty, the late Emperor departed this life, etc. Done at St. Petersburg, July 7 (18), 1762" (*The Life of Catharine II, Empress of Russia*, third edition, vol. i, p. 304, 8vo, London, 1799).

M. Dupuytren mentions that the celebrated characters Copernicus and Arius both died of the hæmorrhoidal flux (*Leçons orales de clinique chirurgicale*, tome i, p. 341, imp. 8vo, Paris, 1832).

The following authors all speak of the excessive hæmorrhoidal flux, and some of them report some extraordinary cases: Avenarius (*Dissertatio de fluxu hæmorrhoidali*, Erfordiæ, 1726), Bell, A. Redford (*Dissertatio de hæmorrhoidum fluxu immodico*, Basileæ, 1698), Brandt (*Dissertatio casus de nomio hæmorrhoidico mensium fluxu in virgine observato*, Lipsiæ, 1710), Carmann (*Dissertatio de fluxu hæmorrhoidali*, Basileæ, 1715), De Berger (*Dissertatio de hæmorrhoidibus ultra modum profusis et cæcis*, Jenæ, 1700), Fisch (*De Hæmorrhoidibus excedentibus*, Halæ, 1718), Frederick, John A. (*Dissertatio de hæmorrhoidibus immodicis*, Lipsiæ, 1658), Nicolia (*Dissertatio de fluxu hæmorrhoidali nimio cum nimia diarrhœa*, Jenæ, 1776), Plattenhardt (*Dissertatio de alvo hæmorrhoisso*, Tubingæ, 1721), Præger (*Dissertatio de hæmorrhoidum fluxu nunc salutari nunc autem noxio*, Viteb, 1764), Rivius (*Dissertatio de hæmorrhoidibus apertis*, Lipsiæ, 1709), Ruchler (*Dissertatio de hæmorrhoidibus apertis*, Lipsiæ, 1709), Schilling, Sigismund (*Dissertatio de hæmorrhoidibus earumque nimio fluxu*, Argentorati, 1652), Schroeter, J. F. (*Dissertatio de fluxu hæmorrhoidum præter naturum*, Basileæ, 1614).

Diagnosis of the Hæmorrhoidal Flux.—Bleeding by the rectum and anus sometimes proceeds from other sources than the hæmorrhoidal vessels; therefore, hæmorrhage through these media must not be taken alone as a positive evidence that it proceeds from those vessels, or from internal hæmorrhoidal tumors. The bleeding from the rectum consequent upon rectal abrasions, ulcerations, or erosions, or from the intestines or viscera beyond the rectum, as in some fevers and in phthisis, must not be confounded with the hæmorrhoidal flux, the character of which is fluid, and is generally of a bright vermilion color, and may be arterial, purely venous, or a mixture of both. It may be discharged immediately before, at, or after a dejection, and may cover the fæces, but never mixes with them; whereas hæmorrhage from the intestines or viscera beyond the rectum is manifested by the blood being black, coagulated, and mixed with the fæces. When the hæmorrhage is the result of dysentery, it is mixed with mucus, which gives it the characteristic appearance of portions of flesh; and when it is produced by various kinds of ulceration, it is always mixed and confounded with the dejections. The writer would remark here that hæmorrhoidal tumors protruded and bleeding sometimes do not immediately cease to bleed after being replaced, as is usual, but continue to discharge a small quantity of blood into the rectum, which forms there a coagulum, and is the first material which is discharged in dark clots at the next evacuation.

The diagnosis of the hæmorrhoidal flux is plainly pointed out by the celebrated and learned Greek Actuarius, of the thirteenth century, who says: "Verum ille (sanguis) qui ab altioribus locis emanat et aliquamdiu in corpore est moratus, nigrior est: hic vero purus sincerus, et qualis ex jam cæcis hostiis profluit" (*De Methodo medendi*, lib. i, cap. xx; 12mo, Basileæ, 1529.)

It may be proper to remark here that some authors have said that the hæmorrhoidal flux and the catamenial flux are very analogous if not identical; but the very idea is absurd, for the former is a hæmorrhage of blood which coagulates and which is pathological; whereas the latter is a healthy discharge of a fluid which never coagulates, and which has neither the color of arterial nor of venous blood; and in odor, too, it is remarkably distinct from that of blood, and is also very much less disposed to decomposition or putrefaction, and is physiological.

Is the Hæmorrhoidal Flux Salubrious?—The ancient authorities believed that the hæmorrhoidal flux was the means of eliminating the *materies morbi*, or through which the *semina morbi* might be evacuated and health restored; and when the flux was entirely suppressed it was, upon the principle of metastasis, determined either to the liver and produced dropsy, to the lungs and produced phthisis, or to the head and produced apoplexy.

Many authorities, both ancient and modern, have recorded numerous cases to illustrate their views as to the therapeutic value or salutary power of the hæmorrhoidal flux to prevent or to cure disease, to promote continued good health, and to insure long life. These isolated cases are all of a similar character, and do not bear close scrutiny. They only tend to prove the exception to a rule. The following is a case in point: The celebrated Professor M. Richerand cites the case of a merchant who had arrived at the age of eighty-nine years, who attributed the continued good health he enjoyed to a hæmorrhoidal flux which had existed for more than fifty years; so regular and so considerable was the flow that whenever he evacuated his bowels the blood would spout out from the anus for a certain distance as from a vein opened by a lancet (*Nosographie chirurgicale*, tome iv, art. Lésions vitales des artères capillaires, 8vo, Paris, 1812).

Now, the question is, Was it really in consequence of this continuous daily waste of blood for fifty years that this man was able to enjoy such good health and to have attained to the great age of eighty-nine years? Or was it

not rather owing to his naturally good and robust constitution, his great tenacity of life, and the extraordinary power of Nature to restore so rapidly this daily loss of the vital fluid which, under such continued depressing influences, preserved his life for so many years? Then, how disingenuous, how illogical it is to select such an isolated case to prove that the daily continued loss of blood from the rectum is essential to good health and long life. Had this merchant followed the advice of Aetius, by having the hæmorrhage gradually arrested, and at the same time observing a proper diet, exercise, and an occasional purgative, he might soon have overcome this worse than evil habit and might have attained to the age of one hundred years. We sometimes hear it said that such and such an inebriate always had good health and attained to an extraordinary age, although for many years he was daily under the influence of the intoxicating draught. Who, we ask, would select such a case to prove that intemperance in the use of alcohol tended to good health and long life? Some persons attain great age under the most adverse circumstances. These are the exceptions, not the rule.

The doctrine that the hæmorrhoidal flux is salutary and not noxious is a serious if not a fatal fallacy, for it leads to the entire neglect of the hæmorrhage at an early stage, when it might be successfully suppressed or managed and worse evils really prevented.

The Treatment.—If the hæmorrhoidal flux is quite moderate, it might be a question, under attending circumstances, whether or not to let it alone for the time being; if, on the contrary, however, it occurs daily, is considerable, and the patient weak and nervous, it must at once be arrested. The writer has generally succeeded in suppressing the hæmorrhage in these cases and restoring the patient's health by strictly observing the following course:

To anæmic patients of a nervous and serious temperament he has given the following tonic and anodyne pills:

℞ Sulph. ferri..... ʒ j;
Ext. belladonnæ..... gr. vj;
Syr. simplicis..... q. s.
M., fiat massa in pilulas xxiv dividenda.

One pill should be taken morning, noon, and night. Or, to fulfill the same indication, the following solution has been given to very weak, nervous, and anæmic patients with the immoderate hæmorrhoidal flux:

℞ Ferri citratis..... ʒ iv;
Sulph. quininæ..... ʒ j;
Acidi citrici..... gr. xxx;
Aq. destillatæ..... ℥ ij.
Fiat solutio.

From twenty to thirty drops of the solution should be taken three times daily in a wineglassful of the cold infusion of wild cherry bark (*Prunus virginiana*); at the same time the infusion may be drank freely through the day.

In addition to these it is highly important and necessary, in order to arrest the hæmorrhage, to inject into the rectum half a pint of cold water just before each evacuation of the bowels, and soon after the evacuation two or three ounces of limewater (liquor calcis) should be injected into the same, to be retained if possible.

When the hæmorrhage occurs *guttatim* from the mucous membrane of the rectum, the writer has frequently succeeded in arresting it by the application of the nitric acid of a specific gravity of 1·500. The bleeding mucous surface should be delicately touched with it by means of a fine glass-hair brush or with a wooden spatula. Two or three applications will be sufficient, five days intervening between them. Great care should be observed to confine the application only to the affected bleeding mucous surface, and not let any of the acid come in contact with the fine, delicate, and highly sensitive muco-cutaneous tissue about the verge of the anus. Immediately after applying the acid, olive oil should be applied to somewhat modify its action.

When the hæmorrhoidal flux is very profuse and escaping *per saltum* from organized tumors, nothing will generally succeed in arresting it but the complete removal of the tumors themselves, and it is much easier to arrest the bleeding and effect a complete cure than when the hæmorrhage issues *guttatim* from the whole mucous surface. In the former case there is almost always to be found the dilated extremity of a capillary tube in the tumor if regularly organized and of sufficient age. By removing the tumor or tumors the bleeding, of course, ceases by means of the plastic inflammation which follows the operation and which completely seals the bleeding vessel which supplied it.

In all such cases it is of the utmost importance for obvious reasons that the patient should have one regular and easy passage daily, avoiding as much as possible extra straining efforts. If the bowels are obstinately constipated mild laxatives must be taken in addition to the enemata of cold water. The writer has frequently used the following aperient with advantage in such cases:

℞ Sulphuris loti,
Magnesiæ calcin., } āā..... ʒ iv.
Sacch. lactis,
M. Fiat pulvis.

Two teaspoonfuls of the powder should be taken whenever indicated.

The writer has used balsam of copaiba and oil of turpentine with good results in the treatment of excessive hæmorrhoidal flux.

Acidulated drinks and some of the light wines may be continually used with great advantage during the treatment, together with all means of prophylaxis.

The Mitchell District Medical Society.—The forty-ninth semi-annual meeting will be held in Shelbyville, Ind., on June 29 and 30, 1896. An elaborate programme is being arranged, providing for papers by some of the most eminent men in the profession. The Shelby County Medical Society, which has more than a State reputation for entertaining, is preparing to entertain the society handsomely. The programme will be issued about June 15th.

The New York Celtic Medical Society.—The regular monthly meeting was held on Thursday, the 22d inst. The order for the evening included scientific communications and the presentation of instruments and specimens.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. APPLETON & Co.
Edited by FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, APRIL 25, 1896.

THE DANGER OF DIPHTHERIA ANTITOXINE.

PROFESSOR LANGERHANS'S recent proclamation that his little child had been killed by the use of the diphtheria antitoxine was pathetic, even if it was somewhat sensational. Sudden death may be expected to occur now and then immediately after such a procedure as the subcutaneous injection of anything, be it so simple as distilled water, whether as a mere coincidence or through some subtle connection as cause and effect. However, every case of the kind ought to be put on record. Two instances of the untoward action of the serum have lately been related in the *Journal of the American Medical Association.* One of them, recounted by Dr. James L. Taylor, of Wheelersburg, Ohio, occurred in the practice of Dr. S. S. Halderman, of Portsmouth, Ohio. Some of the members of a family were affected with a mild form of diphtheria, and the doctor administered a prophylactic dose of Behring's serum, fresh, beneath the scapula of a boy, five years old, belonging to the family, in whom the disease had not appeared. The boy was asleep when the injection was given, and up to that time he had seemed to be in perfect health, but in five minutes he was dead. "The doctor had withdrawn to another room to refill his syringe for use on another child," says the account, "when the mother noticed the boy's lips puffing up and called to him that something was wrong with Willie. By the time the doctor reached the child, breathing had ceased."

The other case was one in which Dr. C. C. Gratiot, of Shullsburg, Wisconsin, was called to a father and daughter, a child five years old, who had diphtheria severely. He treated them both successfully with Behring's antitoxine. The wife, who was nursing her husband and child, complained somewhat of her throat and asked the doctor to examine it. He found nothing but a little redness of the arches of the fauces, the pulse and temperature were both normal, and the appetite was good. The woman was apparently in good health, but was fatigued from broken rest. As she was all that the sick ones had to depend upon for a nurse, the doctor advised her to take a prophylactic dose of antitoxine and she consented. As he did not have the prophylactic preparation with him, Dr. Gratiot used No. 1, green label, 600 units strength, Behring's Op. No. 253. In a few minutes after receiving the injection, over the right breast, with every aseptic precaution, the woman complained of feeling faint, her pulse went up to a hundred and was almost imperceptible at the wrist, she became very pale, her feet and hands were cold, her breathing was hurried and shallow, her pupils were dilated, and her face was covered with a cold perspiration. The doctor laid her down with her head low and gave her stimulants. It was six hours before she rallied so that she could sit up, and twenty-four hours before she felt herself again. Dr. Gratiot briefly mentions another case in which he noticed similar symptoms, but not so severe, from the use of a prophylactic dose of antitoxine in a child nine years old.

Whatever may be the final verdict of the profession as to the merits of the antitoxine as a remedy in diphtheria, says Dr. Taylor, the facts should not be lost sight of that it is a most powerful agent, that the contraindications to its use are not yet well ascertained, and that it may be an active instrument of great evil as well as of possible good. He thinks it is not often that the evidence of the ill effects of an alleged remedy is as clear as it was in the case related by him; it was given as a prophylactic to a healthy child, so that the result can not in any degree be imputed to disease. We think it may be well to bear in mind also that syncope induced by a slight cause may be very serious, even fatal, and we question the wisdom of administering a subcutaneous injection to a sleeping person. The direct agency of the specific properties of the serum in producing the fatal result in Dr. Halderman's case seems open to considerable doubt. Nevertheless, it must be conceded that the utmost caution should be employed in the use of the diphtheria antitoxine.

A SEVERE CRITICISM.

IN the *Centralblatt für Gynäkologie* for March 21st, Dr. J. Esser, "Frauenarzt in Altona," relates the case of a healthy, well-built woman who, when six months advanced in her second pregnancy, was attacked with labor pains. Her uterus was as large as it should have been at full term, but the fœtal limbs were not to be felt externally, or the heart sounds or the funicular souffle to be heard. Her labor advanced promptly to the expulsive stage, and by the vagina the little head was felt to be engaged. The forceps was employed, and with it the head was detached from the body. No hæmorrhage occurred from the lacerated surface, and a gentle digital examination caused the umbilical cord to part; in short, it was evident that the fœtus had been dead long enough to become thoroughly macerated. Intra-uterine exploration showed that the great distention of the uterus was due to an enlargement of the child's trunk. Fearing that the enlarged trunk might contain an accumulation of infectious matter which would come in contact with the maternal parts if delivery by embryotomy was attempted, Dr. Esser had the woman conveyed to his clinic, near by, where he performed the Cæsarean operation after Sänger's method. The enlargement of the child's body was found to be due to distention of the chest and abdomen with a clear fluid. The mother made a satisfactory recovery. Dr. Esser holds that, provided hospital appliances are at hand, the prognosis for the mother is better in such a case if the Cæsarean operation is performed than if embryotomy is resorted to, and in support of his posi-

tion he cites an analogous case reported by Dr. Ludwig, of Chrobak's clinic in Vienna.

In the same journal for April 4th, however, Dr. F. Ahlfeld criticises Dr. Esser's course very severely. It may happen, he says, that in the conduct of a case harrowing to both mind and body, in which one resource after another fails, an obstetrician at last loses his head and subjects both mother and child to danger by resorting to a wholly unsuitable procedure; and under the circumstances he may be pardoned, or at least the circumstances may be pleaded in extenuation. But in the whole history of obstetrics it has not been recorded before that a practitioner calling himself "Frauenarzt" and having a "Klinik," presumably, therefore, having served for some time as assistant in a hospital, when called to a well-built woman in labor in the sixth month, has applied and reapplied the forceps, then explored the interior of the uterus up to the fundus on the right and on the left, whereby he has ascertained that the obstacle to delivery lay in abnormal distention of the child's body, and finally sent the woman into his "Klinik" and performed the Cæsarean operation on her. The climax is capped when Herr Esser has the heart to publish such a case and maintain that his conduct of it was proper.

Dr. Ahlfeld goes on to declare that, if Dr. Esser had followed the precepts laid down in the text-books, his course would have been as follows: When an hour or two had elapsed after full dilatation of the os uteri, and the little head, lying deep in the roomy pelvis, failed to advance, he would have suspected at once that the trouble was due to immense distention of the fœtal trunk. An examination with four fingers, or at all events with the whole hand, would easily have cleared up the point, and then he would have simply opened the distended trunk with the perforator, after which the child would soon have been expelled without further medical intervention. Think, he exclaims, of what dangers the poor woman had to stand, of how her soul must have quaked when she was told that she had to be sent to a clinic, there to undergo a difficult and perilous operation! Every argument that Dr. Esser brings forward in support of the propriety of the Cæsarean section he declares to be utterly fallacious. Against such blunders, he adds, teachers of young physicians should be loud in their testimony. Nothing of the sort, he says, is taught in any German gynæcological clinic and Dr. Esser has no ground for alleging that his case possessed extraordinary features; on the contrary, that particular cause of dystocia is a typical one, occurs over and over again, and is always to be met in the same way. Ludwig's case, which Esser unjustly adduces, showed real difficulties; the child was gigantic, and a young physician might well have been perplexed as to his choice of resource. But even in this case the Cæsarean operation was unnecessary. Neither case can be regarded as legitimately extending the field of usefulness of the Cæsarean section; on the contrary, each of them should serve as a warning to young physicians.

We have given all the essential points of Dr. Ahlfeld's criticism—not literally translated, it is true, but with all their actual meaning. It is certainly severe; it amounts to a rebuke. We can not question the soundness of the argument from a scientific point of view, but we may suggest that gentler terms would have answered every purpose except that of squelching a young obstetrician, and such a wish can not have been in the critic's mind. For one thing, we think, Dr. Esser is to be commended, and that is for publishing so frank an account of his case.

MINOR PARAGRAPHS.

A PROPOSED JOURNAL OF MEDICAL HISTORY AND GEOGRAPHY.

We have received a copy of an announcement to the effect that an international journal devoted to the history of medicine and to medical geography is soon to be started. The journal is to be called *Janus*, and is to be published in Amsterdam. The articles, as we understand the circular, will be in German, English, or French. It is expected that the first number will be issued in May or June, and that thereafter the numbers will appear every other month. The announcement is interesting as showing the tendency to specialization in medical journalism; it is further noteworthy as being the first example, so far as we know, of a German document printed in Latin type with that particular combination of consonants which in Gothic type looks like *sz*, but has the force of *ss*, transliterated into *sz*. For example, the words that are ordinarily printed, when Latin letters are used, *dass*, *muss*, and *grösseren* figure here as *dasz*, *musz*, and *gröszeren*. This is rather perplexing at first sight, and we hope it will not come into vogue.

THE AMERICAN PÆDIATRIC SOCIETY'S COLLECTIVE INVESTIGATION OF THE ANTITOXINE TREATMENT OF DIPHTHERIA.

This important undertaking, an account of which is given in another part of this issue of the *Journal*, ought to meet with widespread co-operation. The committee, we are asked to say, requests physicians who have not received the circular, but have used the antitoxine, to fill out the blanks in the form that we print, designating them by number, and send the report by mail to the chairman.

THE PROPOSED SEMI-CENTENNIAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

The proposal to hold such a meeting in Philadelphia, mention of which will be found elsewhere in this number of the *Journal*, will, we hope, meet with general favor. It seems particularly fitting that the celebration should take place, and that Philadelphia should be the scene of it.

ITEMS, ETC.

The Journey to Atlanta.—Physicians who intend being present at the meeting of the American Medical Association will find it much to their advantage to go *via* Savannah on one of the Ocean Steamship Company's fine ships, on which the most comfortable accommodations and the best food that the markets afford are provided. The trip by sea consumes from fifty to fifty-five hours, and is a most delightful journey.

A Röntgen picture of an infant, aged nine weeks, showing skeletal bones, liver, stomach, heart, etc. By William J. Morton, M.D.

Steamers sail on Tuesdays, Thursdays, and Saturdays, but the latest date upon which those selecting this route can start in order to reach Atlanta in time for the meeting is Thursday, the 30th inst., on which day the City of Augusta, one of the finest ships of the line, commanded by Captain Henry C. Daggett, sails at 3 P. M., and arrives at Savannah on the evening of Saturday, May 2d. This will give passengers an opportunity to spend Sunday in Savannah, from which city they can start in the evening by rail, at 8.15, and arrive in Atlanta on the morning of Monday, May 4th. The fare to Atlanta, by this route, is $24, which includes meals and a stateroom berth on the steamer and railroad fare (only) from Savannah to Atlanta. Tickets are sold on the certificate plan, which entitles the holder to return by the same route at one third fare, making the cost of the round trip $32.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending April 21, 1896:

DISEASES.	Week ending Apr. 14.		Week ending Apr. 21.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	2	1	4	0
Scarlet fever	119	6	117	12
Cerebro-spinal meningitis	5	3	1	3
Measles	535	30	509	39
Diphtheria	227	37	279	38
Tuberculosis	172	142	235	143

The American Laryngological Association.—The eighteenth annual meeting will be held in Pittsburgh, on May 14th, 15th, and 16th, under the presidency of Dr. William H. Daly, of Pittsburgh. The programme includes the following papers: Some Thoughts about the Prophylaxis of Nasal Catarrh, by Dr. Carl Seiler, of Philadelphia; The Ætiology of Deviation of the Nasal Sæptum, by Dr. John O. Roe, of Rochester; The Operation for Deviation of the Nasal Sæptum, by Dr. A. W. Watson, of Philadelphia; Some Reflections on Atrophic Rhinitis, by Dr. W. P. Porcher, of Charleston; Recent Progress in the Treatment of Malignant Disease of the Larynx, by Dr. D. Bryson Delavan, of New York; Acute Stenosis of the Larynx, by Dr. W. E. Casselberry, of Chicago; Laryngeal Photography with the Aid of the Arc Light, by Dr. T. R. French, of Brooklyn; Spindle-celled Sarcoma of the Nasal Passage, by Dr. J. E. Boylan, of Cincinnati; Naso-pharyngeal Fibrous Tumors, by Dr. E. Fletcher Ingals, of Chicago; Naso-pharyngeal fibromata, by Dr. C. M. Shields, of Richmond, Va.; Tubercular Infection of the Lymphoid Tissue of the Pharynx and Larynx, by Dr. Jonathan Wright, of Brooklyn; The Relation of Diseases of the Nose and Throat to Disorders of the Digestion—Acute Diseases of the Nose and Throat, by Dr. M. R. Brown, of Chicago; Chronic Diseases of the Nose and Throat, by Dr. T. R. French, of Brooklyn; A Case of Myxœdema of the Throat, by Dr. J. W. Farlow, of Boston; A Case of Gunshot Wound of the Pharynx, by Dr. D. N. Rankin, of Alleghany, Pa; A Contribution to the Pathological Anatomy of Ethmoid Disease, by Dr. J. N. Mackenzie, of Baltimore; Seropurulent Maxillary Sinusitis in Chronic Lead Poisoning, by Dr. H. L. Wagner, of San Francisco; Study of the Irruption of the Teeth into the Nasal Chambers—A *Résumé* of Reported Cases and a Report of Additional Cases, by Dr. A. W. Mac Coy, of Philadelphia; The Control of Hæmorrhage in Operations on the Nose and Throat, by Dr. E. Coolidge, Jr., of Boston; Intermittent Dysphonia Spastica, by Dr. F. I. Knight, of Boston; Tracheal Stenosis, by Dr. Samuel Johnston, of Baltimore; A case of Unusual Laryngeal Growth, by Dr. J. W. Gleitsman, of New York; A Report of Cases of Tuberculosis of the Larynx with Results of Treatment as far as Ascertained—The Topical Use of Bromoform, Formaldehyde, Guaiacol, and Protonuclein, by Dr. S. Solis-Cohen, of Philadelphia; The Treatment of the Early Stage of Diphtheria, by Dr. S. H. Chapman, of New Haven; A Remarkable Case of Fibro-chondroma of Branchial Origin, or So-called Supernumerary Ear, Removed from the Throat of an Infant Six Weeks Old—A Report of a Case of Incomplete Fracture of the Left Cornu of the Thyreoid Cartilage, Resulting from Self-inflicted Violence, by Dr. A. W. de Roaldes, of New Orleans; The Sequelæ of Syphilis and their Treatment—The Nose, by Dr. Charles H. Knight; The Pharynx, by Dr. J. E. H. Nichols; and The Larynx, by Dr. W. K. Simpson, of New York; Acute Disease of the Lingual Tonsil, by Dr. H. L. Swain, of New Haven; The Principles of the Treatment of Simple Acute Laryngitis and Bronchitis—Epithelioma of the Velum Palati Cured by Injections of Caustic Potash, by Dr. Thomas Hubbard, of Toledo, Ohio; A Case of Perichondritis of the Left Cricoarytænoid Joint from an Unusual Cause, by Dr. H. S. Birkett, of Montreal; Erysipelas of the Air Passages, by Dr. William Porter, of St. Louis; Some Notes of Two Cases of Sarcoma of the Nasal Chambers and Accessory Sinuses, by Dr. A. A. Bliss, of Philadelphia; and Some of the Unusual Manifestations of So-called Catarrhal Laryngitis, by Dr. C. C. Rice, of New York.

The Late Dr. J. West Roosevelt.—The directors of the New York Physicians' Mutual Aid Association have prepared the following minute:

"The directors of this association have heard with deep regret of the death of Dr. J. West Roosevelt, an honored member of the association. His learning, his probity, and his manliness were qualities which endeared him to all with whom he came into association.

"They acknowledge with deep appreciation his generosity and kindness in bequeathing to the association the amount of his claim, one thousand dollars, as an addition to the permanent fund of the association, and feel that in no surer way could a benefaction be made, for all time, a blessing to the needy members of his profession in this State.

"It was ordered that the name of Dr. J. West Roosevelt be placed on the list of benefactors of the association, and that notice of this action be sent to the medical journals."

The Removal of almost the Whole Omentum from a Hernial Sac.—Apropos of a summary which we gave in the *Journal* for February 1st of a case reported in the *Lancet*, Dr. George R. Green, of Muncie, Indiana, has sent us a reprint of an account of a case in which he removed almost the entire mass of the omentum from a hernia in a man sixty-one years old.

The Death of Professor Semmola, of Naples, is announced as having taken place recently. He was sixty-five years old.

The Long Island College Hospital, Brooklyn.—Dr. H. Beekman Delatour has been appointed a surgeon to the institution.

Changes of Address.—Dr. Nathan Bozeman and Dr. Nathan G. Bozeman, to No. 140 Madison Avenue, New York; Dr. Arpad G. Gerster, to No. 34 East Seventy-fifth Street, New York.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Medical Officers of the United States Ma-*

rine-Hospital Service for the Fifteen Days ending April 15, 1896:

Kinyoun, J. J., Passed Assistant Surgeon. To proceed from Washington, D. C., to Wilmington, Del., for special temporary duty. April 8, 1896.

Wertenbaker, C. P., Passed Assistant Surgeon. To proceed from Delaware Breakwater Quarantine to Wilmington, Del., for special temporary duty. April 8, 1896.

Nydegger, J. A., Assistant Surgeon. Granted leave of absence for two days. April 13, 1896.

Stewart, W. J. S., Assistant Surgeon. Granted leave of absence for six days. April 6, 1896.

Norman, Seaton, Assistant Surgeon. Granted leave of absence for fifteen days. April 14, 1896.

Tabb, S. R., Assistant Surgeon. To proceed from Richmond, Va., to Chicago, Ill., for duty. April 14, 1896.

Mathewson, H. S., Assistant Surgeon. To proceed from New York, N. Y., to Boston, Mass., for temporary duty. April 6, 1896.

Appointments.

Sherrard R. Tabb, of Virginia, and Henry S. Mathewson, of Connecticut, commissioned by the President as Assistant Surgeons. April 1, 1896.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending April 18, 1896:*

Bogert, E. S., Passed Assistant Surgeon. Detached from the U. S. Steamer Albatross, ordered home, and granted three months' leave of absence.

Moore, J. M., Assistant Surgeon. Detached from the U. S. Steamer Vermont and ordered to the Naval Hospital, Norfolk.

Young, L. L., Passed Assistant Surgeon. Detached from the Naval Hospital, Norfolk, and ordered to the U. S. Steamer Albatross.

De Valin, C. M., Assistant Surgeon. Ordered to examination for promotion.

Society Meetings for the Coming Week:

Monday, *April 27th:* Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore Medical Association.

Tuesday, *April 28th:* Texas State Medical Association (first day—Fort Worth); Medical and Chirurgical Faculty of Maryland (first day—Baltimore); New York Dermatological Society (private); Metropolitan Medical Society, New York (private); Buffalo Academy of Medicine (Section in Obstetrics and Gynæcology); Medical Society of the County of Putnam (annual); Hunterdon, N. J., County Medical Society (Flemington); Litchfield, Conn., County Medical Society (semi-annual); Richmond, Va., Academy of Medicine and Surgery.

Wednesday, *April 29th:* State Medical Society of Arkansas (first day—Fort Smith); Texas State Medical Association (second day); Medical and Chirurgical Faculty of Maryland (second day); Auburn, N. Y., Medical Association; Berkshire, Mass., District Medical Society (annual—Pittsfield); Gloucester, N. J., County Medical Society (quarterly); Middlesex, Mass., North District Medical Society (annual—Lowell).

Thursday, *April 30th:* Association of American Physicians (first day, Washington); State Medical Society of Arkansas (second day); Texas State Medical Association (third day); Medical and Chirurgical Faculty of Maryland (third day).

Friday, *May 1st:* Association of American Physicians (second day); State Medical Society of Arkansas (third day); Texas State Medical Association (fourth day); Practitioners' Society of New York (private); St. Louis Academy of Medical and Surgical Sciences; Baltimore Clinical Society.

Saturday, *May 2d:* Association of American Physicians (third day); American Academy of Medicine (first day—May 4th, second day—Atlanta); Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society, New York (private); St. Louis Medical Society; Miller's River, Mass., Medical Society.

Answers to Correspondents:

No. 448.—It seems wholly a matter of conjecture. We should say not more than a very few hours at most.

No. 449.—We understand it is done in Washington. It can not be done in New York.

Births, Marriages, and Deaths.

Born.

Wessinger.—In Ann Arbor, Michigan, on Thursday, April 16th, to Dr. and Mrs. J. A. Wessinger, a daughter.

Married.

Barry—Conley.—In Woonsocket, R. I., on Tuesday, April 14th, Dr. William F. Barry and Miss Elizabeth Agnes Conley.

Charlet—Dugas.—In Plattenville, La., on Wednesday, April 15th, Dr. A. M. Charlet and Miss Rosalie Dugas.

Gervais—Lebby.—In Fort Johnson, James Island, S. C., on Tuesday, April 7th, Mr. Bacot Gervais and Miss Katherine Gratton Lebby, daughter of Dr. Robert Lebby.

Hodgskin—Linson.—In Tarrytown, N. Y., on Wednesday, April 15th, Mr. James Black Hodgskin and Miss Eloise Linson, daughter of Dr. John J. Linson.

Linley—Doty.—In Charleston, S. C., on Saturday, April 11th, Dr. William J. Linley and Miss Julia G. Doty.

Mitchell—Talmage.—In Brooklyn, on Wednesday, April 15th, Mr. J. Murray Mitchell and Miss Lillian Talmage, daughter of Dr. John F. Talmage.

Pitts—Screws.—In Montgomery, Ala., on Thursday, April 16th, Dr. Robert Newton Pitts, of Pittsboro, Ala., and Miss Elizabeth Walton Screws.

Twohey—Lanz.—In Buffalo, on Tuesday, April 14th, Dr. John J. Twohey and Mrs. Mary J. Lanz.

Van Schaick—Wood.—In New York, on Wednesday, April 15th, Mr. Singleton Van Schaick and Miss Ida Wood, daughter of the late Dr. James R. Wood.

Died.

Daly.—In Rahway, N. J., on Tuesday, April 14th, Dr. John J. Daly, aged forty-four years.

Harris.—In Sag Harbor, N. Y., on Saturday, April 18th, Dr. James B. Harris, aged thirty-seven years.

Lamb.—In Augusta, Ga., on Wednesday, April 15th, Dr. Theodore Lamb, in the thirty-ninth year of his age.

McKenzie.—In Leroy, Ill., on Monday, April 13th, Dr. John F. McKenzie, aged sixty-three years.

Wilson.—In Baltimore, on Saturday, April 18th, Mr. Henry P. C. Wilson, Jr., son of Dr. Henry P. C. Wilson, aged twenty-nine years.

Letters to the Editor.

THE CAUSES OF DEATH OF PROMINENT PERSONS.

To the Editor of the New York Medical Journal:

SIR: In the *Journal* for April 11th there is a list of the Causes of Death of Prominent Persons, by Dr. Ralph S. Michel, quoted from the *Journal of the American Medical Association*. The author says that he believes the statements given in the extract to be "quite accurate." The first account offered is that Shakespeare, with his boon companions, Ben Jonson and Michael Drayton, "spent the evening at a tavern at New Place. All became too much intoxicated to reach home, and they remained out all night on the ground. The consequence to Shakespeare was a fever of which he died in a few days." Where does the doctor get his authority for that statement? The Rev. John Ward, who was appointed vicar of Stratford in 1662, forty-six years after Shakespeare's death, has left us this note as hearsay: "Shakespeare, Drayton, and Ben Jonson had a merrie meeting, and it seems drank too hard, for Shakespeare died of a feavour there contracted." The fact that they "remained out all night upon the ground" has no contemporary evidence to confirm it. All students of Shakespeare are inclined to doubt the gossip in its entirety.

If Dr. Michel will take the trouble to look up the history of Galileo on more sides than one he will find that most of his statements concerning this "martyr to progress" have been disproved by different writers about once every five years for the past two centuries. *Some Lies and Errors of History*, by the Rev. Reuben Parsons, D. D., is a book containing a clear exposition of the Galileo myth.

A READER.

INHALATIONS OF IODINE AND CARBON DISULPHIDE IN TUBERCULOUS PULMONARY DISEASE.

COLUMBIA, ALA., *April 20, 1896.*

To the Editor of the New York Medical Journal:

SIR: It is not without some feelings of reluctance that we present to the readers of your *Journal* the result of our experience with a new treatment for pulmonary diseases. The successive failures which have followed the use of almost all the medicinal measures which have heretofore found favor for a time, make an expectant world look upon any new suggestions with a degree of apathy amounting to almost absolute disgust. We, however, are so well assured of the value of the method as well as the medicine that we present, neither of which is entirely new, that our expectations are not at all dampened with the idea of these suggestions not meeting with the approval of the profession as well as the public after the effects of the treatment are in evidence. We amend the remark just made with reference to the originality by asserting that the special combination that we suggest is new, so far as we can learn from the literature at our command: however, the particular value of one of the ingredients in scrofulous and tuberculous affections has long been known and recognized, and repeated efforts have been made at different times in the direction of proving the practical value of the remedy when applied in proper amount topically to the diseased part of the lungs.

Briefly, then, our plan is dependent for its usefulness upon the special value of iodine in combination with carbon disulphide, and the compound used by inhalation. The disulphide is very volatile at ordinary temperature and is an ideal vehicle for carrying iodine to all parts of the laryngeal and lung areas. We are quite positive that by deep inspiration the remotest recesses and apical caseations are reached. The good effects are manifest during the first day's trial, and the night cough which is so troublesome and exhausting is much improved, and this is among the first benefits derived. Expectoration is lessened in quantity and the quality is made decidedly better in a short time. The sulpho-carbon compound is put down as poisonous, and we have watched very closely for any untoward symptoms attributable to its inhalation, but so far have failed to note any objection to its use under proper precautions and directions from the physician. About a twelve-per-cent. solution, or, more accurately, one of a drachm of iodine to the ounce of disulphide, is what we have used in practice. Owing to the solubility of rubber and kindred matter in the disulphide, it is rendered inadmissible as material for an inhaler, which should be made of glass preferably.

A cheap, convenient instrument may be improvised by using a small test-tube with a sponge in the bottom saturated with the liquid; it will be necessary to replace the sponge frequently, because of the corrosive action of the medicine. For lung and laryngeal treatment, the inhalation is to be made through the mouth with the instrument pushed far back, approximating the opening of the larynx. The frequency with which it may be used is variable according to the individual condition and effects; we may say, on an average, once every two hours during the day. The bisulphide has a bad odor which is objectionable to some patients. We have experimented with a view to rendering it more agreeable and have made various additions and modifications, resulting with no advantage considerable enough to justify the use of anything additional, inasmuch as such a change might possibly lessen the practical value of the original formula. Menthol is perhaps the most harmless addition that we have attempted. We should be very glad if the profession would prove the efficacy of the treatment and report the results.

J. H. STOVALL, M. D.
F. S. TWITTY, M. D.

Proceedings of Societies.

SOCIETY OF THE ALUMNI OF THE CITY (CHARITY) HOSPITAL.

Meeting of March 4, 1896.

The President, Dr. RICHARD C. NEWTON, in the Chair.

Primary Lateral Sclerosis of the Spinal Cord (Spastic Paralysis).—Dr. JOSEPH B. BISSELL presented a plumber, thirty years old, with a good family history. He had had no illness to interfere with his work before the present difficulty. Twice he had had soft chancres, eleven and twelve years ago, which healed promptly under local treatment only. Three years ago he had a hard chancre followed by an eruption and some sore throat. He received prompt specific treatment, continued up to the present time with some intermissions. Two years ago severe headaches came on, and were relieved by treatment in a month or two. With these terrific headaches he had epistaxis, dizziness, and sharp pains in the knees. As these last passed off, the legs became stiff and tremulous. The present condition had existed for the past six or seven months without much improvement. Stiffness was not so marked, though the gait was peculiar, due to muscular rigidity. As he walked, the whole leg shook and trembled. Contracture was not marked as yet. The tendon re-

flexes were all exaggerated, especially a typical ankle clonus. The bowels were slow, the appetite was good, and there was no difficulty with the bladder; pulse 112, temperature 98·6° F. The disease was, so far, confined to the lower limbs, the upper only lately beginning to trouble him. There was no true motor paresis, and there had not been, or any of the usual symptoms of myelitis, atrophy, or sensory disturbances. The patient had no pain in any part of his body. The speaker had not noticed until to-night that he had marked difficulty in walking, but that seemed to be due to the audience examining him. He could walk in and out of the speaker's office without any trouble, but he did not like to cross the street alone. He had been given the usual syphilitic remedies, mercury in all forms, and iodide of potassium. He had taken at times a hundred and twenty grains of iodide of potassium three times a day; he had taken it for two weeks and been a great deal worse under it. He had improved under small doses of hyoscyamus. The disease was supposed to be sclerosis.

Dr. V. P. Gibney said that the method of treatment he had found of some value in a class of cases allied somewhat to the one presented, occurring in young children, was orthopædic. The difficulty was observed when they began to walk. The mother placed the child on the floor and the legs crossed over in a scissorslike position. The child would stand for a moment in that way, but the attempts at standing or walking were difficult. He spoke of cases where he had divided adductors rather extensively and kept the limbs put up for from three to six months, hoping that the muscles might tire. One ought to attack it from the spinal cord, but that was not feasible, and hence one must be contented with making these cases orthopædic. He spoke of cases where the limbs were converted from a scissorslike condition into a straight-leg condition, and said he had seen patients able to walk with their heels square on the floor. He believed that such patients did get better, and spoke of a man now operating a farm in the Catskill Mountains who for several years had been confined to a wheel-chair. Now he could drive in a buckboard and was able to get around easily. The speaker said that in most cases of Pott's disease there was little impairment of sensation. It was seldom that these patients failed to get well. The wonder was how the cord, with so much inequality of the column and so much thickening of the tissues, brought about by contiguity of the bone lesion, could work so well even when powerless for many months. In children we might expect any form of paralysis from Pott's disease to get well. He spoke of one case of a hunchback boy whom he had known for twenty years, who had had compression of the spinal cord and finally got well.

Dr. Græme M. Hammond said that, in regard to the syphilitic causation of these cases, he was somewhat in doubt. In certain syphilitic cases one could account for the disease by a syphilitic endarteritis of the small vessels, which closed up the lumen of the vessels to a great extent and diminished the blood supply to those columns so that starvation resulted, followed by the death of the column starved. Often there was a proliferation of the connective tissue with a gradual squeezing out of the nerve fibres. One saw these cases in certain diseases of the bone, fractures of the spine where compression had been caused by dislocated fragments of bone pressing directly upon the lateral tracts. The speaker thought the prognosis in all cases, with perhaps one exception, was hopeless, and that exception was where the disease was caused by compression. If the case was seen early and the pressure removed from the spinal column, the individual had a chance of recovery; but, if the compression was severe or allowed to go on long enough, permanent injury of the cord followed and relief of the compression was not followed by the cure of the patient. He thought the cases in children very perplexing; there was seldom any syphilitic history. Congenital defects in the posterior columns were sometimes observed, and occasionally one found defects in other parts of the spinal cord. In one case observed by the speaker there had evidently been delay in the development of the posterior internal columns of the cord. The child could move its legs and feet freely, but could not walk, on account of a deficiency in the muscular sense. In time the child had learned to walk perfectly well. It was probably a delayed developmental case. In regard to making "orthopædic cases" out of them, as Dr. Gibney had suggested, some relief could undoubtedly be accomplished in that manner, but it must be purely in the way of curing deformities. After the tendons had been cut, the individual, on account of the diminished contractures, was enabled to walk much better, because there was rarely in any stage of the disease any profound loss of motion. The difficulty consisted in stiffness and rigidity. In regard to curing a disease of the spinal cord by operating on the muscles of the legs, he would only state that such an idea was not worthy of any serious consideration. In cases with a syphilitic history, he had not seen treatment produce beneficial results. There was complete destruction of the nerve fibres; these fibres were squeezed out of existence, and it was not reasonable to suppose that treatment would restore nerve fibres that were gone. It was possible, perhaps, to prevent extension of the disease. The disease usually began in the pyramidal tracts in the lumbar region, and either remained in that region or else ascended to higher levels. It did not seem to shorten life, and after it had progressed to a certain extent it often ceased to advance. The patients always retained a certain amount of motion, but beyond that he saw absolutely nothing to be hoped for.

Dr. S. Kohn spoke of a case under his care, interesting by reason of its ætiology, that of a girl of seventeen years. Her mother alleged that the trouble had followed immediately upon an attack of measles and very grave diphtheria when the girl was five years old. She had the contractions and exaggerated reflexes, walked around with a great deal of difficulty, and had the typical scissors legs.

The President said he remembered once reading a statement made by Dr. H. C. Wood that the nervous diseases of syphilis were curable by appropriate treatment, but his own experience, although by no means extensive, had been very discouraging in nervous lesions appearing in syphilitic subjects. Perhaps it was because, as had just been asserted by Dr. Hammond, such diseases as spastic paralysis appearing in syphilitics were not really due to the syphilis.

Paradoxical Response of the Pupils to the Stimulus of Light.—The President read a paper with this title. A negro driver, forty-nine years old, married, with a long history of bronchitis and no specific history, had begun three or four months ago to have dizzy spells in which he staggered and partly lost consciousness. The seizures were quite short. He had not fallen in these attacks until a day or so before coming to the hospital. Then he had fallen or sat down four times; on the last occasion he had fallen from his wagon, striking on his head, and been unconscious for about half an hour. He had been taken to his home, where he had had three more hard convulsions. He had complained, when conscious, of great pain in the head, above the left ear. On the next day after his arrival at the hospital he had had three more severe convulsions and been more or less actively delirious between them. The bowels had been loose, with in-

voluntary evacuations of fæces and also of urine. His hearing was blunted and he was evidently nearly or quite blind. The pupils were unequal, *dilating on exposure to light.* He lay with his eyes closed and made some resistance to opening the lids. When both eyes were held open, the pupils dilated, sometimes equally and sometimes not, one contracting to a pinhead, while the other dilated. There was an anterior synechia of the lower border of the left iris. No nystagmus was noted. Careful study had made the speaker confident that the dilatation was due to light, especially at first. Later this change took place more rapidly; the dilatation was not so extreme and the contraction was more prompt. The change was made several times a minute. The patient's delirium increased, though no more convulsions occurred. His swallowing was normal. As the disease progressed, a comatose condition came on, and there appeared some paralysis of the left arm and leg. From the first, complete absence of tendon reflexes had existed and marked cutaneous anæsthesia. Pricking the soles of the feet, while causing him to swear or grumble a little, caused scarcely any reflex movement. During the last two days of his life, swallowing became difficult and impossible. The bowels moved only after enemata; the urine was abundant and passed involuntarily. There was no vomiting while he was in the hospital. No temperature chart could be kept. He rapidly became emaciated, and his breath grew intensely fœtid. He died quietly on February 1st, thirteen days after his fall.

The autopsy, made five hours after death, showed moderate rigor mortis, no abrasions or marks of violence on the body. The left hemisphere of the cerebrum bulged most. On opening the dura, a quantity of dark, partly organized blood clot was removed, leaving a ragged cavity of the size of half a tennis ball in the cortex of the left temporo-sphenoidal lobe. Under the pia mater, extending over a considerable part of the convexity of the right hemisphere, was a layer of gelatinous matter three or four lines thick. The brain substance was softened sufficiently to make its removal difficult. No other gross lesion of the brain was noted. The spinal cord, to the touch, seemed unusually firm. The lungs showed patches of induration at each apex only. The heart and large vessels showed only several small patches of atheroma in the ascending aorta. The left suprarenal capsule was broken down, and was removed for further examination.

The most interesting phenomenon presented in this case was the peculiar pupillary reaction. It was difficult to determine whether it was rhythmical and independent of light stimulus or not; but the writer had concluded that it was due to the approach of light, or at least was greatly augmented by it. As the condition of the patient changed from active delirium toward coma, this dilatation and contraction of the irides became more constant and independent of light, and nearer alike in the two eyes, while the excursion of the pupils was not so great as at first, but more frequent. Rhythmical action of the pupils independent of light, termed hippus, had been noted in various conditions, even in blindness. It was often, though not always, associated with nystagmus. From this association Gulpin had conjectured that the name had arisen, vertical nystagmus being easily comparable to the trot of a horse. Careful search through text-books and the periodical literature of the last ten years had yielded only one case of paradoxical reaction of the pupils, which had been kindly pointed out to the speaker by Dr. Starr in Kuie's work on *The Eye in General Diseases*, page 116.

Report upon the Microscopic Appearances of the Brain in the Case.—Dr. Henry Power stated that the brain received from the president had presented no unusual appearances to the naked eye, beyond those already described. The entire organ had been placed by the speaker in a two-per-cent. formalin solution, and, when hardened, the left pons and crus had been imbedded and sections made from ten levels, extending from the upper part of the pons to the upper end of the crus. Sections had also been taken from a block of cortex. Sections from these eleven localities had then been stained by Weigert's, Haidenhein's, and Nissel's methods. Weigert's and Haidenhein's methods had given good pictures, but shown only normal appearances. Nissel's method, which gave a very beautiful demonstration of certain elements in the normal ganglion cell, had been used here, in the hope that minute changes would be found in the ganglion cells of the cortex and of the nucleus of the third nerve. The upper external portion of this nucleus had been examined with particular care, as in Dr. Starr's table it was stated to be the portion governing the pupil reflex. The results of this examination had been somewhat unsatisfactory, as, although the cells in all the regions examined had shown some departure from the typical normal appearance with this method, it had been so slight and so uniform in all the sections that it caused one to suspect some error in the method of fixing and hardening used. A few sections had also been stained by the hæmatoxylin method, and the blood-vessels examined. No changes had been found. The pathological findings were thus seen to consist of the large cortical lesion and a possible slight change in all the ganglion cells examined.

Dr. Hammond asked the speaker if he had examined any of the spinal-cord cells to see if there was a change there.

Dr. Powers said that the spinal cord had not been taken out.

Dr. A. T. Muzzy said that he had been reading recently from a German who gave the idea of hippus as a reflection from the color of the eye, the name coming from the action of the rhythmic motion in expansion and contraction. As to the condition of dilatation, he had two or three cases he was watching, both eyes being perfectly normal and yet dilatation being unilateral, each one being responsive to light, and the size of the pupils different. As to why this should take place, he had not come across any information.

The President said that one interesting point which he had forgotten to mention in discussing his case was the "dizzy-headed" spells. These were probably *petit mal*, and epilepsy, it would appear from literature, was one of the conditions in which hippus might appear. The patient had undoubtedly had tuberculosis and appendicitis. After the first convulsion following the fall upon the head, the patient could see and talk rationally. His having lost consciousness for a while, regaining it for some hours, and then having convulsions, would point more to a meningeal hæmorrhage, which the patient was found on autopsy to have had, than to a hæmorrhage in the deeper portions of the brain.

A Study of Highly Mineralized Thermal Waters in the Treatment of Disease, Based upon Experience at the Glenwood Hot Springs, Colorado.—Dr. Henry H. Schroeder read a carefully prepared paper with this title. He said that the results observed while he had been acting at the Glenwood Springs as resident physician had led him to give a description of the physiological and therapeutic action of these waters. The climate compared favorably with the best European, the rainfall at Glenwood being fifteen inches, including snow, while in the Alps, at Engadine, there was a yearly precipitation of thirty-one inches, and one of thirty-nine inches at Davos-Platz. Not only in its dryness, but also in temperature, these American springs were favorable, outdoor exercise and even swimming in the great salt-water pool being enjoyed

throughout the year. Though the altitude was 5,600 feet, invalids suffered no distress from this, but were able to take physical exercise with increased force and profit. There were fifty springs at Glenwood, but only a few were made use of. These gave an abundant flow at a temperature of 127° F., and were very heavily laden with salts and gases. An additional feature were great caverns filled with warm (112° F.) vapors from springs in the floors. The author reported the favorable effect of these springs on a number of patients, principally from Colorado, in order that the value of the water might be shown, rather than that of the climate—persons with gout, rheumatism, and gastro-intestinal and hepatic disorders. The springs seemed especially efficient in skin affections. Care should be taken not to use the water in acute skin conditions. The water had an unctuous, bland effect on the skin. The benefit was probably due to the strong sulphurous constituents. There were contraindications in organic disease of the kidneys with degenerative changes in the blood-vessels, epilepsy, acute inflammatory diseases, recent hemiplegias, menorrhagia, and metrorrhagia. But the water was famous for eliminating metallic poisons, such as lead, which frequently accumulated in the system among the miners in the mining regions of the adjacent mountains.

Dr. Lewis R. Morris said that some years ago, while starting on a hunting expedition, he had happened upon Glenwood and found an extremely fine sanitarium there; not so large as the one at Aix-les-Bains or Carlsbad, but as well equipped as most of the resorts in Europe. He spoke of the value of elimination by the skin in the treatment of certain diseases, especially of lead poisoning, rheumatism, and gout. In looking up the literature of this subject, he had found the pathology of the secretion of the skin very little touched upon. At the bath resorts abroad, at Carlsbad and Aix-la-Chapelle, it was one of the strongest agents used, and he thought that was one of the reasons of the striking cures obtained at Glenwood. The Indians had first discovered the place, and were in the habit of taking an annual sweat in one of the caves, especially if they had contracted rheumatism or syphilis or any of the other diseases that Indians were apt to have. The skin, although it secreted proportionately very little urea, secreted a great deal of fatty acid, and its chemical formula, Latham had shown in his lectures, was almost identical with that of urea. The vapor at Glenwood contained a great deal of sulphurous acid, and any one using it on the skin had probably observed the quickness with which it produced perspiration. The part of the skin to which it was applied would be much more apt to sweat than other parts. He spoke of the mud baths of Carlsbad. The mud was dampened with water, and the patient was put into the bath, which acted like an enormous poultice. Afterward he was put into blankets and allowed to sweat. The same thing applied to Aix-les-Bains, where they gave vapor baths. He advised physicians to be patriotic and recommend the springs in our own country, instead of sending American money abroad. A banker in Carlsbad had told him that $8,000,000 of American gold had come into their hands in one summer.

The President said that we were not very well informed about the mineral springs of our own country. There were many thousands of them, and they were now being studied and the results tabulated by the authorities at Washington. It was to be hoped that, following Dr. Schroeder's example, American physicians would take every opportunity for investigating these springs, and would report the results. He felt very much obliged to Dr. Schroeder for his painstaking and careful report.

Book Notices.

Transactions of the First Pan-American Medical Congress, held in the City of Washington, September 5, 6, 7, and 8, 1893. In Two Parts. Washington: Government Printing Office, 1895. Pp. vi–2250.

It is not to be expected that a report of this kind shall be critically reviewed, for even were such treatment demanded its execution would require time and space almost unlimited. The character of the papers and discussions which make up these transactions, from their very nature, forbids the exercise of minute criticism, even were it possible, and therefore of necessity our notice must apply to the whole and not to the parts. The congress and its doings were things so vast that one's impulse to seek the why and wherefore is lost in admiration at the great proportions of the completed work. As an undertaking and an accomplished fact, it must from its very magnitude reflect great credit upon its organizers and promoters, and as an example of organization alone it is to be admired. But what is the result of all this expenditure of effort and ability? It is not to be doubted that the closer drawing together of the medical bodies of the countries which participated—and that was the prime object of the congress—has been attained. It could scarcely be otherwise, and, though, as the largest of American nations, and perhaps as the most progressive medically, we of the United States had more to give than to receive, yet were we not donors alone, for a considerable proportion of the communications was from countries other than our own. That much benefit must have been derived by all who participated seems certain, for such things induce breadth of thought and knowledge and tend to prevent that individualism and self-satisfaction from which nations as well as persons must suffer. How practical will be the benefits from the congress it is as yet too early to say, for it is not to be expected that they should at once become manifest, but rather slowly and almost insensibly. From a practical standpoint, the second congress will be more convincing than the first, for the surest evidence of success will be a survival of the practice and perhaps a growth. These larger considerations should, however, not obscure the results already obtained, of which these transactions are the records. The volumes, of course, contain a large amount of what is purely official and therefore, however necessary, of what is medically worthless. The medical contributions are, in general, excellent. It could not be expected that the worthless would be absent, and indeed there is plenty of it; yet the standard is higher than one would expect, and medically speaking the publication is creditable. Indeed, when we compare the first Pan-American Congress and the record of what it accomplished with similar convocations and their results, though we are aware that the standard is not a high one, we must express satisfaction and gratification at results so good, and hope that the perpetuation of the practice may demonstrate the utility of medical meetings on so large a scale, for, with regret be it said, their usefulness is sadly in need of proof.

Electricity in Electro-therapeutics. By Edwin J. Houston, Ph. D., and A. E. Kennelly, Sc. D. New York: The W. J. Johnston Company, 1896. Pp. vii–402. [Price, $1.]

After a considerable period of apparent lethargy, when little scientific progress was observable, the therapeutic application of electricity has entered on a phase of active development and is rapidly finding its level among remedial agents.

It is no longer a subject which medical men can afford to ignore, and yet a clear, concise, and scientific exposition of electro-physical phenomena as they are now understood by scientific men was hardly accessible to physicians until this little book appeared. The treatises on electro-physics are too bulky and technical; those on electro-therapeutics are weak and out of date on the physical side.

This little work steps in to fill the gap, telling the student of electro-therapeutics just what he needs to know, in language remarkably clear and well chosen and according to the latest and best thought. While the whole is good, the chapters on the difficult but important subjects of frictional and influence machines and high-frequency discharges are to be especially commended. If the contents of this little book were familiar to those who make use of electric currents as a remedy, empirical work would be discouraged, and the progress of the science would be facilitated. The profession is much indebted to the eminent authors for their lucid and authoritative exposition of a subject of increasing practical importance.

Infantile Mortality during Childbirth and its Prevention. By A. Brothers, B. S., M. D., Instructor in Operative Gynæcology at the New York Post-graduate Medical School and Hospital, etc. William Furness Jenks Prize Essay of the College of Physicians of Philadelphia. Philadelphia: P. Blakiston, Son, & Co., 1896. Pp. viii–11 to 179. [Price, $1.50.]

Upon reading the title of this book, one is immediately interested to learn how much that is new or original the author has added to this poorly understood and much neglected subject. The first sentence of the preface makes one pause, for surely obstetrics has not been brought to such a high scientific standard that we need hesitate to intrude and attempt at least to make it higher! The preface goes on to state that "the object of the present essay is to make a careful bird's-eye view of the entire subject, without attempting to give a detailed account of everything, as required in text-books, and to point out the advances made in recent years in the interest of the unborn child previous to labor, during the critical hours of actual labor, and in the earliest period of life succeeding labor."

The opening chapter deals with the accoucheur, showing quite truly that the majority of confinements, occurring out of institutions, fall into the hands of comparatively untaught physicians and midwives. This chapter covers a little more than two pages. Assuredly the most efficient prevention of infant mortality is the development of properly educated accoucheurs; and it does not seem well that the subject should be treated in such a cursory manner, when so much could be done by showing the importance of higher education in this branch of medicine.

Chapter II deals with the statistics of infant mortality, and the reader is impressed that the author has failed to sift the literature upon this subject. In the following chapter a table of forty-seven autopsies upon children is given—a number so small as to be of little value.

The rest of the book is made up of an enumeration of the causes of infant mortality due to parents and child, both before, during, and after labor. In Chapter XXXIII general prophylactic rules are given for the prevention of infant mortality by care and watchfulness during pregnancy and the puerperium. We do not believe that it is wise to advocate that labor be induced in every case in which a woman is supposed to have gone over the normal two hundred and eighty days.

In conclusion, when one has finished reading this book, the feeling presents itself that the author has failed to devote sufficient time and study to so important a subject. There is evidence of considerable research, but at some later date we hope to see the subject more fully and systematically dealt with.

Health in the Home. A Practical Work on the Promotion and Preservation of Health. With Illustrated Prescriptions of Swedish Gymnastic Exercise for Home and Club Practice. By E. Marguerite Lindley, Lecturer on Health-culture. New York: Published by the Author, 1896. Pp. xii–414.

This work contains chapters on the training of children, the physiology of circulation, respiration, and digestion, Swedish exercises, massage, self-diagnosis, bicycling, dress, and other topics. Among much useful information may be found some statements open to serious question, and the work would be improved if the style were more concise and the English more careful. For any exercise to be widely applicable and thoroughly satisfactory it must be interesting, spontaneous, and performed in the open air. Many sports, games, and occupations fulfill these conditions as well as produce the physiological effects of exercise in promoting wholesome growth and graceful function. It is likely that the bicycle, in spite of excesses, will produce more practical effects on the health and physique of our people than any number of gymnasiums, whether public or not. The correction of special physical vices should be under a physician's direction.

The International Medical Annual and Practitioner's Index. A Work of Reference for Medical Practitioners. By Various Contributors. Fourteenth Year. New York and Chicago: E. B. Treat, 1896. Pp. 728. [Price, $2.75.]

No theoretical considerations lead the reviewer to indorse this work, for it is one to which he constantly refers, and one from which he seldom fails to derive the information he seeks. The appearance of the fourteenth volume is therefore exceedingly welcome to us, and doubtless equally welcome to many others. The general arrangement of the book is the same as that of its immediate predecessors, and the matter is comprehensive in the highest degree. Several pages are devoted to the Röntgen photography, a fact which forcibly illustrates how eager the editors are in their efforts to make the work cover all recent medical advances; and the remainder of the contents is equally commendable in this respect, no important medical question being neglected. We are pleased to note the reappearance of a New York writer among the contributors after a year's absence, for his articles have commanded our interest and contributed to our satisfaction in the work. To those who need the condensed and well-arranged presentation of the medical advances of the past year —and this class must necessarily include all physicians—we heartily commend the *International Medical Annual.*

BOOKS, ETC., RECEIVED.

Text-book of Comparative Anatomy. By Dr. Arnold Lang, Professor of Zoology in the University of Zurich. Translated into English by Henry M. Bernard, M. A. Cantab., and Matilda Bernard. Part II. London and New York: Macmillan & Co., 1896. Pp. xvi–618. [Price, $5.50.]

Cephalalgy and Massage. By Gustaf Norström, M. D., of the Faculty of Stockholm. New York, 1896. Pp. 68.

New York Eye and Ear Infirmary Reports. Vol. IV. Part I. January, 1896.

Report of the Results obtained with the Experimental Filters at the Pettaconset Pumping Station of the Providence Water Works. By Edmund B. Weston.

A Portable Sterilizer for Private Operations. By Willy Meyer, M. D. [Reprinted from the *Medical Record.*]

When shall we Operate for Appendicitis? By Willy Meyer, M. D. [Reprinted from the *Medical Record.*]

Practical and Efficient Sterilization of Materials for Private Operations—The Finished Portable Sterilizer. By Willy Meyer, M. D. [Reprinted from the *Medical Record.*]

Formalin Catgut. By Hunter Robb, M. D., Cleveland, Ohio. [Reprinted from the *Cleveland Medical Gazette.*]

A Case of Multiple Myomata of the Uterus. Ulcerated Varicose Veins of the Left Leg. Hysteromyomectomy. Recovery. By Hunter Robb, M. D. [Reprinted from the *Cleveland Medical Gazette.*]

Pruritus of the Genitals. By Hunter Robb, M. D. Read before the Cleveland Society of Medical Sciences.

When may Gonorrhœal Patients Marry? By Ferd. C. Valentine, M. D. [Reprinted from the *American Medico-surgical Bulletin.*]

Urethroscopy in Chronic Urethritis. By Ferd. C. Valentine, M. D. [Reprinted from the *Medical Record.*]

Fever in the Course of Bright's Disease and in Uræmia. By Alfred Stengel, M. D. [Reprinted from the *American Journal of the Medical Sciences.*]

Where to Send Invalids and Semi-invalids for the Winter. By Samuel S. Wallian, M. D. [Reprinted from the *American Medico-surgical Bulletin.*]

Polymyositis Acuta, with a Report of a Case presumably of Syphilitic Origin. By James B. Herrick, M. D. [Reprinted from the *American Journal of the Medical Sciences.*]

Recherches expérimentales sur l'inanition chez le lapin. Par J. F. Heymans. [Extrait des *Archives de pharmacodynamie.*]

Peninsula del Coronado. By Walter Lindley, M. D., Los Angeles, Cal. [Reprinted from the *Journal of the American Medical Association.*]

Die geschlossenen Heilanstalten für Lungenkranke und die Behandlung in denselben. Von Dr. Arthur von Jaruntowsky, Brust-, Hals- und Nasenarzt in Posen, fr. I., etc. Berlin: S. Karger, 1896. Pp. 3–48.

Miscellany.

New York Electro-therapeutic Clinic, Laboratory, and Dispensary.—The first anniversary of the establishment of this institution was celebrated on Monday evening, April 6th, by a reception at the clinic rooms, No. 327 East Twenty-fifth Street. Dr. Margaret A. Cleaves, the founder and director, read the annual report, showing that 213 different patients had been treated on the 132 clinic days covered by the report, and 2,099 applications of electricity given. Thirty-one students from many different States had received instruction in electro-therapeutics. One of the objects of the clinic is to aid in the advance of electro-therapeutics by original research, and we learn that interesting and practical results have been obtained in defining the value of negative insulation in static applications. There were 850 franklinic applications given, of which four fifths were with negative insulation. The result in increase of weight, regulation of temperature and heart's action, increase of urea, and diminution of uric acid, did not vary from those made with positive insulation. From this it is deduced that, so far as physiological effect is concerned, it does not matter which insulation is used; as the spark from negative insulation is more tolerable, it is now used from choice. In metallic electrolysis the value of copper and zinc electrodes in the treatment of catarrhal and other affections of mucous membranes has been substantiated, and considerable work has been done with silver sounds and tips. The action of silver has been found to be more superficial and less irritating than that of copper, and to have a wide range of therapeutic utility. After the reading of the report, addresses were made by Mr. A. E. Kennelly, who exhibited Mr. Edison's skiascope, Dr. Grace Peckham-Murray, Dr. O. S. Phelps, Dr. Henry Ling Taylor, Mr. Newman Lawrence, M. I. E. E., London, England, and Dr. Francis Valk. Dr. Robert Newman acted as toast-master.

The Association of American Physicians.—The eleventh annual meeting will be held in Washington on April 30th and May 1st and 2d, under the presidency of Dr. A. Jacobi, of New York. Besides the president's address, the programme includes the following papers:

Leucomaine Poisoning, continued, by Dr. B. K. Rachford, of Cincinnati; A Toxicogenic Germ Found in Ice Cream and its Chemical Products, by Dr. V. C. Vaughan and Dr. George D. Perkins, of Ann Arbor, Mich.; A Statistical and Experimental Study of Terminal Infections, by Dr. S. Flexner, of Baltimore; The Effect of Acute Alcoholism on the Normal Resistance of Rabbits to Various Forms of Infection, by Dr. A. C. Abbott, of Philadelphia; The Identity of the Streptococci, and a Description of at least One New Variety, by Dr. H. C. Ernst, of Boston; The Virulence of the Diphtheria Bacilli occasionally Found in the Throat in Cases presenting the Clinical Features of Amygdalitis, by Dr. H. M. Biggs, of New York; The Conditions influencing the Appearance of Toxine in Cultures of the Bacillus of Diphtheria, by Dr. Theobald Smith, of Boston; Diphtheria Antitoxine sometimes Found in the Blood of Horses that have not been Injected with Toxine, by Dr. B. M. Bolton, of Philadelphia; Diphtheria Antitoxine obtained by Electrolysis, by Dr. B. M. Bolton and Dr. H. D. Pease, of Philadelphia; Bacteriological Examinations in Acute Endocarditis, by Dr. W. H. Welch, of Baltimore; The Significance of Pathogenic Spirilla in American Surface Waters, by Dr. A. C. Abbott, of Philadelphia; The Treatment of Anthrax in Rabbits by Intravenous Injections of Nucleinic Acid, by Dr. V. C. Vaughan, Dr. Charles T. McClintock, and Dr. George D. Perkins, of Ann Arbor, Mich.; Two Varieties of Tubercle Bacillus from Mammals, by Dr. Theobald Smith, of Boston; A Case of Parasitic Chyluria with Filariæ Sanguinis Hominis Nocturnæ in the Blood and Urine, by Dr. F. P. Henry, of Philadelphia; Note on Neusser's Granules in the Blood, by Dr. William Osler, of Baltimore; A Case of Leucocythæmia, by Dr. J. H. Musser and Dr. Joseph Sailer, of Philadelphia; Notes on the Treatment of Pernicious and other Forms of Essential Anæmia, by Dr. I. N. Danforth, of Chicago; Idiopathic Osteopsathyrosis in Infancy and Childhood, by Dr. J. P. Crozer Griffith, of Philadelphia; A Case of Tricuspid Stenosis with other Heart Lesions and Cardiac Liver, with Specimens, by Dr. George Dock, of Ann Arbor, Mich.; Painful Points in Gouty Arthritis compared with Rheumatic Arthritis, by Dr. W. H. Thomson, of New York; Habit Chorea, by Dr. Wharton Sinkler, of Philadelphia; On a Method of curing Tic Douloureux, by Dr. C. L. Dana, of New York; The Relation of Migraine to Neuralgias of the Fifth Nerve, by Dr. J. J. Putnam, of Boston; Raynaud's Disease and Erythromelalgia, by Dr. J. H. Musser, of Philadelphia; Abscess of the Spinal Cord,

by Dr. M. A. Starr, of New York; The Prevalence and Fatality of Pneumonia, by Dr. C. F. Folsom, of Boston; The Prognosis in Pneumonia, by Dr. A. H. Smith, of New York; A Case of Œsophageal Hæmorrhage with Cirrhosis of the Liver, by Dr. G. M. Garland, of Boston; A Case of Subdiaphragmatic Abscess, Diagnosis, Operation, and Subsequent Death from Pleurisy of the Other Side, by Dr. E. G. Cutler, of Boston; Hepato-pulmonary Abscess, by Dr. William Osler, of Baltimore; On Absorption of the Stomach, by Dr. S. J. Meltzer, of New York; The Diagnosis and Treatment of Dilatation of the Stomach, by Dr. William Pepper and Dr. Alfred Stengel, of Philadelphia; A Case of Wandering Phlebitis, Periphlebitis, by Dr. W. P. Northrup, of New York; The Pathology and Pathogenesis of Acute and Subacute Diffuse Nephritis, by Dr. W. B. Councilman, of Boston; Syphilitic Nephritis, by Dr. H. A. Lafleur, of Montreal; Dispensaries and their Use in Teaching, by Dr. M. H. Fussell, of Philadelphia; A Case of Actinomycosis, with Specimens, by Dr. T. S. Latimer, of Baltimore; and Mescal Buttons (Anhalonium Lewinii), by Dr. D. W. Prentiss and Dr. F. P. Morgan, of Washington.

The American Medical Association.—In the Section in State Medicine, at the meeting in Atlanta, on May 5th, 6th, and 7th, the following papers are to be read: The State Care of Physically Defective Classes, by Dr. William E. Wirt, of Cleveland; The Sanitary Control of Small-pox, by S. L. Tepson, of Wheeling; Preventive Medicine in Apoplexy, by Dr. Ephraim Cutter, of New York; Heredity as a Social Burden, by Dr. A. W. Wilmarth, of Norristown, Pa.; Hygiene *versus* Drugs, by Dr. C. F. Ulrich, of Wheeling; The Prevention of Small-pox, by Dr. Elmer Lee, of Chicago; Drugs *versus* Animal Viruses as Prophylactics, by Dr. Reginald B. Leach, of Paris, Texas; A Plea for the Domestic Destruction of Garbage, by Dr. N. E. Wordin, of Bridgeport, Conn.; The Welfare of the Community Demands that Marriage should be Regulated, by Dr. Daniel R. Brower, of Chicago; Age and Sex Incidence of Mortality in Michigan from Diphtheria and Croup during Twenty-five Years, from 1870 to 1894, a Statistical Study, by Dr. Cressy Wilbur, of Lansing, Mich.; The Prophylaxis of Functional Nervous Diseases, by Dr. John Punton, of Kansas City; A New Treatment of Phthisis, by Dr. H. W. Mitchell, of New York; Pure Water, by Dr. Frank W. Epley, of New Richmond, Wis.; The Evil Results of Overstudy in the Young, by Dr. Thornton Parker, of Groveland, Mass.; The Treatment of Insanity, by Dr. S. V. Clevenger, of Chicago; The Prevention of Infectious Diseases, by Dr. J. M. G. Carter, of Waukegan, Ill.; The Prophylaxis of Typhoid Fever, by Dr. John Eliot Woodbridge, of Cleveland; Physicians as Pauperizing Agents—a Review of Some Neglected Points in State Medicine, by Dr. Douglas H. Stewart, of New York (to be read by Dr. Manley); The Turkish Bath, etc., by Dr. Forbes Winslow, of London; The Therapeutic Action of the Turkish Bath, by Dr. V. Tagellski, of London; The Need of Public Baths, by Dr. Charles H. Shepard, of Brooklyn; The Prevention of War and the Promotion of Peace in Relation to State Medicine, by Dr. Edward Davies McDaniel, of Mobile; Health Boards as Disturbers of the Peace, by Dr. Charles McIntire, of Easton, Pa.; The Inadequacy of Public Hygiene as a Means of Preventing National Physical Decay, by Dr. J. H. Kellogg, of Battle Creek, Mich.; The Physician's Duty to the General Public, by Dr. J. W. Cokenower, of Des Moines, Iowa; Health Departments of Large Cities, and their Organization, by Dr. John B. Hamilton, of Chicago; The Methods of Drainage now Prevailing in Some of our Eastern Seaboard Municipalities Tending to the Production and Dissemination of Disease, by Dr. Augustus P. Clark, of Cambridge, Mass.; A Department or a Bureau of Health? Which? by Dr. S. S. Herrick, of San Francisco; Some Thoughts relative to a National Department of Public Health, by Dr. F. E. Stewart, of Detroit; Progress in State Medicine in Pennsylvania, by Dr. E. O. Bardwell, of Emporium, Pa.; Should the State Provide Hospitals for the Treatment of Tuberculous Patients? by Dr. J. S. Jenkins, of Tecumseh, Mich.; Serum Therapy in Some Diseases, by Dr. G. T. Vaughn, of the Marine-Hospital Service; Suicide—Three Cases, with Remarks, by Dr. John L. Davis, of Cincinnati; State Prevention and the Cure of Inebriety, by Dr. O. Evarts, of College Hill, Ohio; The Abuse of Alcoholic Drinks—its Relation to Public Health and its Prevention, by Dr. W. Bayard, of St. John's, New Brunswick; Recent Studies relating to the Toxic Effect of Alcohol upon the Nerve Cells, by Dr. W. H. Riley, of Battle Creek, Mich.; The Non-alcoholic Treatment of Consumption, by Dr. O. G. Place, of Boulder, Colo.; Hospital Management without the Therapeutic Use of Alcohol, by Dr. Sarah Hackett Stevenson, of Chicago; Twenty-one Years' Experience in the Non-alcoholic Treatment of Disease, by Dr. J. H. Kellogg, of Battle Creek, Mich.; What Constitutes True Clinical Experience in Medical Practice and its Relations to the Public Health, by Dr. N. S. Davis, of Chicago; The Evolution of Medical Opinion as to Alcohol and other Narcotics, by Dr. I. N. Quimby, of Jersey City; The Proposed Permanent Badge for the American Medical Association, by Dr. R. French Stone, of Indianapolis; Tuberculosis—Infection from Food, by Dr. Charles E. Winslow, of Los Angeles, Cal.; and Modern Respiratory Advantages, by Dr. W. T. English, of Pittsburgh. Papers will also be read by Dr. T. D. Crothers, of Hartford, Conn.; Dr. A. B. Judson, of New York; Dr. C. H. Hughes, of St. Louis; Dr. G. F. Cook, of Oxford, Ohio; Dr. G. E. Martin, of Carthage, South Dakota; and Dr. Charles S. Sheldon, of Madison, Wis.

The American Orthopædic Association.—The tenth annual meeting will be held in Buffalo, on May 19th, 20th, and 21st, under the presidency of Dr. Royal Whitman, of New York. The preliminary programme includes the following titles:

The President's Address, by Dr. Royal Whitman, of New York; Some Practical Points in the Treatment of Lateral Curvature of the Spine, by Dr. A. B. Judson, of New York; Some Ætiological Factors in Lateral Curvature of the Spine, by Dr. E. G. Brackett, of Boston; Cases Illustrating the Absurdity of Treating Ordinary Lateral Curvature (Scoliosis) by Spinal Supports, by Mr. Bernard Roth, F. R. C. S., of London; The Rationale of Gymnastic Exercise and Pressure Correction in the Treatment of Scoliosis, by Dr. L. A. Weigel, of Rochester; The Rapid Cure of Rotary Lateral Curvature of the Spine and other Postural Deformities by Means of Thorough Development and Corrective Exercises with Heavy Weights, with a Demonstration of the Method, by Dr. Jacob Teschner, of New York; A Simple and Efficient Brace for Lateral Curvature, by Dr. S. L. McCurdy, of Pittsburgh; Congenital Misplacement of the Femur Anteriorly, by Dr. DeForest Willard, of Philadelphia; Further Remarks on Congenital Dislocation of the Hip, by Mr. Bernard E. Brodhurst, F. R. C. S., of London; A Report of a Case of Double Congenital Dislocation of the Hip treated by the Lorenz Method of Operation, by Dr. Reginald H. Sayre, of New York; The Cure of Congenital Dislocation of the Hip by Means of the "Functional Weighting" Method, without Open Operation, by Dr. Adolf Lorenz, of Vienna; Spontaneous Dislocation of the Hip, by Dr. William J. Taylor, of Philadelphia; The Treatment of Clubfoot: When to Commence Treatment and How

—The Indications for Mechanical Treatment—The Limitations of Mechanical Treatment—The Indications for Operative Treatment—The Results in 343 Operations performed by the Writer, by Dr. A. M. Phelps, of New York; Investigations on Flat-foot, by Dr. E. H. Bradford, of Boston; Mechanical Support for Flat-foot, by Dr. John C. Schapps, of Brooklyn; The Anterior Transverse Arch of the Foot, by Dr. Joel E. Goldthwait, of Boston; Injuries of the Tarsus and the Ankle Joint, by Dr. J. D. Griffith, of Kansas City; Subtendinous Exostosis, by Dr. E. G. Brackett, of Boston; The Mechanical Treatment of Ingrown Toe Nail, by Dr. Henry Ling Taylor, of New York; The Operative Treatment of Paralytic Deformities of the Foot, with Particular Reference to Arthrodesis, by Dr. V. P. Gibney, of New York; Some Mechanical Problems in the Treatment of Pott's Disease, by Dr. John C. Schapps, of Brooklyn; The Operative Treatment of Threatening Abscesses in the High Dorsal Region, by Dr. E. H. Bradford, of Boston; The Treatment of Pott's Paraplegia, with a Report of Two Cases, by Dr. Le Roy W. Hubbard, of New York; Osteomyelitis of the Spine, by Dr. T. Halsted Myers, of New York; Suppuration in Joint and Spinal Disease, and its Relation to Tuberculous Meningitis; an Analytical Study, by Dr. Samuel Ketch, of New York; A Study of the Action of Iodoform Glycerin in Tuberculous Osteomyelitis, by Dr. Harry M. Sherman, of San Francisco; Joint Disease in Infancy, by Dr. Augustus Thorndike, of Boston; The Use of Dry Heat of High Temperature in the Treatment of Chronic Joint Affections, by Dr. William E. Wirt, of Cleveland; A Theory of the Ultimate Ætiology of Deformity and its Practical Application, by Dr. Royal Whitman, of New York; The Probable Cause of the Limp in the First and Second Stage of Hip-joint Disease, by Dr. Harry M. Sherman, of San Francisco; Femoral Osteotomy for the Correction of Hip Deformity in Adults, with a Report of Cases, by Dr. A. R. Shands, of Washington; A Report of Cases of Osteosarcoma of the Hip, by Dr. Arthur J. Gillette, of St. Paul; Division of the Hamstring Tendons by the Open Method for correcting Malposition and securing Rest in Tuberculous Disease of the Knee, by Dr. Bernard Bartow, of Buffalo; Tuberculosis of the Wrist and Carpus, by Dr. James E. Moore, of Minneapolis; The Symptoms and Treatment of Slight Knock-knee in Children, by Dr. Robert W. Lovett, of Boston; Two Cases of Dislocation of the Patella treated by Operation, by Dr. Joel E. Goldthwait, of Boston; Some Notes on Spastic Paralysis in Children, by Dr. F. S. Coolidge, of Chicago; Some Recent Modifications in the Treatment of Congenital Wryneck, by Mr. William Adams, F. R. C. S., of London; Contracted Fingers, by Dr. Arthur J. Gillette, of St. Paul; Congenital Club-hand, with a Report of a Case treated by Operation, by Dr. C. E. Thomson, of Scranton, Pa.; Rare Cases from Practice, by Dr. A. J. Steele, of St. Louis; A Report of some Cases of Unusual Congenital Deformities, by Dr. John Ridlon, of Chicago; Congenital Defects of the Long Bones, with a Report of Cases and Operations, by Dr. B. E. McKenzie, of Toronto; Deformities of the Humerus due to Rickets, by Dr. Augustus Thorndike, of Boston; and A Report of a Family of Anomalies, by Dr. S. L. McCurdy, of Pittsburgh.

Landry's Paralysis following Influenza.—The *Lancet* for April 4th publishes the following account of a case which came under Mr. J. C. Bowie's care: The patient was a lad aged seventeen years who was exposed to wet on January 15, 1896. The next day he had an attack of influenza, marked by the sudden onset of feverishness, depression, cough, and a slight amount of soreness of the throat which lasted only for a day. From January 19th to February 1st he traveled a good deal by sea, and was several times exposed to cold in a small boat. On February 1st he made one of these voyages which lasted nine hours in an open boat, and in the evening he was seized with great feebleness, especially of the lower extremities, with numbness of the feet; vomiting also occurred. A slight amount of pain was felt in the back and head. Loss of appetite accompanied the depression. The feebleness increased for two or three days, so that the body was affected generally, also the arms, the right side rather more so than the left. The grasp of both hands was weak. There was difficulty in lying on the right side from a feeling of soreness; this lasted four weeks. The heart's action was slow and feeble, but otherwise natural. The temperature was subnormal; the knee-jerks were lost; there was no difficulty in swallowing; the speech was somewhat slower than natural, but, says the author, this might only be due to depression. On the 10th the temperature was normal (98·6° F.), but otherwise the patient's condition was unchanged. Soreness was felt on kneading the muscles of the limbs. There was slight sensory impairment in the feet. From the 15th to the 24th the bowels became more inactive and refused to react to laxatives, and latterly became loaded. On the latter date injection by enema was resorted to, followed by a dose of croton oil, and since then no difficulty had been experienced. About this time also the urine was longer retained and consequently more copious at a time, but no paralysis occurred. Gradual improvement in muscular power occurred during that time, being still more marked during the following week. Appetite was regained, and since then slow but gradual improvement had taken place. On March 18th the knee-jerks showed a slight reaction after a long period of latency. The patient on the 27th was able to stand, but feebleness of the limbs was still present, so that he was not able to do so for any length of time.

Saffron.—In an editorial on this subject in the *Indian Medical Record* for March 16th the writer remarks that the Council of Medical Education and Registration, which has charge of the *British Pharmacopœia*, has decided to omit saffron from the new edition and to exclude that drug from any preparations which have hitherto contained it. This drug, he says, is of very ancient employment. All nations on the face of the earth have used it. The old Egyptians exported millions of pounds of it from Cairo. The Arabs placed it among their hypnotics, and its virtues were largely extolled by the ancient Persians. Pliny says that the best forms grew in Cilicia, and it was employed by the Greeks, who named it *krokos*. The Arabian writer, Avicenna, says of saffron, "Roborat cor et exhilarat, venerem stimulat, urinam movet" (*Canon. med.*, lib. ii, tract. ii, p. 123).

The *Record* understands that the Hindu doctors prescribe it in nervous affections, in melancholia, and in typhus fever. It is customary also among them to administer it to women to prevent puerperal fever, and the Indian physicians are said to have employed it as an external application in ophthalmia.

The English name is evidently derived from the Arabian *zafran*. Galen thought it tended to destroy the intellect (*De Simplicis*, lib. v, cap. xix), and Celsus thought it acted as a purgative (lib. v, cap. v). The old Dutchman Boerhaave supposed it to have the effect of dissolving the blood if taken to excess, but thought if it were applied externally to the head it would remove frenzy. Some people have asserted that saffron had very poisonous qualities, and that strong solutions would kill a dog in four or five days. The Chinese also

employed it. Mayer has examined the Chinese *crocine*, which appears to be identical with the polychlorite of saffron. It is uncrystallizable and dissolves readily in water or alcohol, and yields an indigo-blue color on treating it with sulphuric acid. It is gathered principally in Thibet, and the Mongolians use it in cooking their food. It is employed, says Soubeiran, in Chinese therapeutics, to facilitate menstruation and to favor the eruption of small-pox, and also as a stimulant, a carminative, and an antispasmodic.

Schulz, in 1746, mentions that it conciliates sleep, exhilarates the mind, and in the young causes laughter: "Somnum conciliant, mentem exhilarant, et in junioribus risum movent." It was also used as an emetic in tablespoonful doses. It contains a subtle ethereal oil which was discovered by Vogee. Pomet praises the saffron of France as being one of the best cordials to be met with, and further says that the Germans, the Dutch, and the English are such admirers of the *gatinois* saffron that they transport great quantities of it every year in times of peace into their own country.

Saffron powder, says the writer, was highly esteemed when it was pure and not put in oil. The ancients made saffron pastilles containing myrrh, roses, almonds, gum arabic, and wine. They brought it from Syria, and used it as a diuretic. This paste or *trochy* was called crocomagna. Whether the remedy is of much use, he says, researches do not reveal.

The old *Edinburgh Pharmacopœia*, continues the writer, has lost a well-known drug, for with the exit of saffron the name Scotch paregoric will no longer be at the disposal of the forgetful and hard-pressed medical student. Saffron being omitted, that comforting mixture will be handed down to the next generation of the Æsculapian brothers with its classical denomination of tinctura opii ammoniata. The original Scotch prescription, which has been so long in use, having been tampered with, it is less than probable that the Scotch members of the General Medical Council, who know anything of materia medica, would now recognize it as Scotch when the ancient formula has been tinkered with by "foreign loons." And yet, he says, few medical men will blame the council, for no harm will overtake the decoction of aloes even when it is made without the saffron, and the aloes and myrrh pill, or the aromatic chalk powder, will doubtless act equally well without it, so also will the compound tincture of cinchona. The ammoniated tincture of opium and the tincture of rhubarb will act either on the stomach or on the bowels quite as effectively without the presence of the saffron. Dr. Lauder Brunton, says the writer, whose unsparing methods of science, with which he has ruthlessly lopped away so many notions, musty with antiquity, but cherished among practitioners even of to-day as old friends, in his book merely says in an offhand note, "Saffron has but little action. It is used chiefly as a coloring agent and as a slight carminative." That is all.

It certainly, says the writer, had renowned powers of coloring. Shakespeare notes its employment in this respect in describing a face "whose villainous saffron would have made all the unbaked and doughy youth of a nation of his color." It was also employed in the English kitchens.

"It is not without regret," adds the writer, "that we part from the pretty little crocus whose ancient hereditary right to an honorable place in the kingdom of drugs has not saved it from the merciless grasp of scientific progress. The pruning hook should not be withheld after cutting off the sweet crocus. There are other plants which have even a less distinguished record than the crocus that do not adorn the pharmacopœia or add to the reputation of the medical profession, but whose only plea for their presence among useful drugs is their antiquity. The pruning hook is further necessary, and, while we will hail with unfeigned fervor whatever new drugs can be brought to our assistance in the fight with disease, we will not grieve to find several of the less useful articles treated, as regards their presence in the pharmacopœia, as the committee of the council have decided to treat the saffron."

The Principles of the Treatment of Eczema.—The April number of the *British Journal of Dermatology* contains an abstract of an article by Professor Lassar which was published in the *Dermatol. Zeitschr.*, Bd. ii, Hft. 6, Berlin, 1895, in which the writer remarks that the author devotes considerable space to an exact pathological description of the changes in the integument affected with eczema. He shows how favorable these changes are to the growth and spread of micro-organisms of saprophytic and pathogenic type, especially staphylococci. First and foremost, exact and searching inquiry should be made in reference to local causes, and the author emphasizes this point, in preference to the assumption that the origin of the eczema is due to the presence of some internal irritant; this, he says, is the refuge of ignorance, and he therefore insists on minute attention being bestowed to local ætiological factors, and even where the research is negative treatment should be so conducted as if a local cause had been ascertained. Hence, notwithstanding the nearly universally accepted dictum of the harmfulness of water, Professor Lassar insists upon the value of baths containing tar, or taken after the latter has been well painted over the affected regions. Just as the surgeon is most careful to disinfect the sound skin before an operation, so the physician in treating eczema should endeavor to attain the same object, and Professor Lassar considers tar one of the best medicaments for this purpose.

After this is effected Venetian talc is to be *copiously* dusted all over and around the area; the author has tried various dusting powders and considers this saponaceous earth (steatite) to be the best remedy, as no decomposition takes place. If the eczema still persists in spite of this, he considers that the irritant that may originally have produced it was sufficiently intense and prolonged to have penetrated into the lymph lacunæ of the lower epidermal layers. In this way, says the writer, Professor Lassar accounts for the beneficial effects of greasy applications in the eczemas which are chronic, and where moisture is not apparent to the naked eye. He attributes the remedial effects of his well-known salicylic-acid paste to the fact that the fatty vehicle carries the antiseptic into the skin. The fatty basis is vaseline, and it has the advantage of undergoing no decomposition. He still recommends the continuation of the use of tar baths. Should the paste cling too firmly, a mixture of zinc oxide, 60 parts, and olive oil, 40 parts, may be used instead. Finally, for obstinate, inveterate forms, Professor Lassar recommends the application of Wilkinson's ointment, which was introduced originally as a remedy for scabies. Its composition is as follows:

℞ Sulphur,
Birch tar, each..... 1 part by weight;
Prepared chalk..... ½ part by weight;
Soft soap,
Vaseline, each..... 2 parts by weight.

The method, says the writer, that has been found useful in his practice is thus summarized by the author: 1. Bathing with the object of removing all products of decomposition that may be on the surface. 2. Painting the surface with tar or the application of salicylic paste or of zinc oil, or of Wil-

kinson's ointment. 3. The *copious* use of Venetian talc over any of the previous applications. Dr. Lassar's paper, says the writer, is a thoroughly practical one, and, although his theoretical considerations may not be acceptable to all, the value of his experience in treatment will be appreciated by dermatologists. If his remarks serve no other purpose than the one of accentuating the importance of attending to minutiæ in the treatment of eczema, his paper will not have been written in vain.

The Texas State Medical Association.—The twenty-eighth annual meeting will be held in Fort Worth on April 28th, 29th, and 30th and May 1st, under the presidency of Dr. P. C. Coleman, of Colorado. The programme includes the following papers: The President's Address, by Dr. P. C. Coleman; Newer Methods of Treatment of Nervous and Mental Disease, by Dr. Frederick Peterson, of New York; Some Settled Questions in Regard to Diphtheria, by Dr. H. A. West, of Galveston; Diphtheritis and Membranous Croup, with Practical Demonstrations, by Dr. S. T. Turner, of El Paso; Diphtheria and Associated Diseases, by Dr. E. W. Capps, of Fort Worth; Diphtheria, by Dr. I. G. Greenwell, of Cleburne; Diphtheria and Pseudo-diphtheria—their Differential Diagnosis by the Practitioner, by Dr. C. O. Mathews, of Terrell; The Influence of Climatic Conditions and Weather Changes on the Functions of the Skin, by Dr. Isaac M. Cline, of Galveston; A Note on the Actions of Apolysin, by Dr. David Cerna, of Galveston; Typhoid Fever, by Dr. W. B. McKnight, of Mansfield; The Treatment of Appendicitis considered from a General Standpoint, by Dr. A. H. Schenk, of Kenney; Hæmatemesis, with the Report of a Case, by Dr. W. R. Blailock, of McGregor; On the Treatment of Pneumonia, by Dr. R. S. Gilbert, of Oak Cliff (discussion to be opened by Dr. Stout, of Dallas); The Prevailing Diseases of East Texas and the Changes thereof as Observed During the Past Thirty Years, by Dr. H. L. Tate, of Lindale; The Actions and Results of Serum in the Treatment of Tuberculosis, by Dr. Paul Paquin, of St. Louis; External *versus* Internal Examination in Obstetrics, by Dr. W. M. Powell, of Albany; Puerperal Septicæmia, by Dr. B. H. Vaughan, of Hillsboro; Puerperal Peritonitis, by Dr. R. B. McKinney, of Memphis, Tenn.; A Report of a Case of Cæsarean Section, by Dr. J. E. Gilcreest, of Gainesville; An Encephalocele, by Dr. A. P. Brown, of Fort Worth (discussion to be opened by Dr. R. M. Swearingen, of Austin); Several Cases of Puerperal Septicæmia caused from a Case of Facial Erysipelas, by Dr. W. M. Yater, of Grandview (discussion to be opened by Dr. A. M. Douglass); Scarlatina, by Dr. G. C. Head, of Grandview; Some Remarks on the Surgery of the Kidney, by Dr. J. E. Thompson, of Galveston; Some of the Latest Methods of Treating Tuberculous Joints and Correcting Deformities resulting from Infantile Paralysis, by Dr. M. M. Edmondson, of Dallas (discussion to be opened by Dr. J. H. Smart, of Dallas); Tuberculosis of Bone, especially of the Knee Joint, by Dr. W. P. Alexander, of Cleburne (discussion to be opened by Dr. W. T. Baird, of Dallas); Some Cases of Osteomyelitis, by Dr. W. R. Blailock, of McGregor; The Importance of Rest and Extension in Traumatisms of the Cervical Vertebræ, by Dr. George H. Lee, of Galveston; The Treatment of Compound Depressed Fracture of the Skull, by Dr. A. C. Scott, of Temple (discussion to be opened by Dr. C. A. Smith, of Tyler); The Early Extirpation of an Intramammary Adeno-sarcoma, by Dr. F. E. Haynes, of Abilene (discussion to be opened by Dr. R. R. Walker, of Paris); Carbuncle with Grave Complications, by Dr. O. L. Williams, of Dallas (discussion to be opened by Dr. D. Dupree, of Dallas); A Report of a Cure of Encephaloid Cancer of the Kidney, by Dr. W. J. Lane, of Dallas (discussion to be opened by Dr. W. A. Duringer, of Fort Worth); Asepsis in Surgery, by Dr. Z. T. Bundy, of Milford (discussion to be opened by Dr. T. F. Oates, of Mexia); Habitual Constipation a Surgical Disease, by Dr. W. T. Baird, of Dallas (discussion to be opened by Dr. Samuel R. Burroughs, of Raymond); The Modern Method of Treating Sprained Ankle, by Dr. J. E. Gilcreest, of Gainesville (discussion to be opened by Dr. A. P. Brown, of Fort Worth); The Surgical Anatomy of the Vermiform Appendix and Cæcum, by Dr. W. Keiller, of Galveston; Chloroform Anæsthesia, by Dr. H. P. Cooke, of Galveston; Chronic Posterior Urethritis, by Dr. J. J. Bush, of Pecos (discussion to be opened by Dr. W. A. Adams, of Fort Worth); Two Cases of Cholecystotomy, by Dr. A. W. Fly, of Galveston; A Plea for Reform in Criminal Jurisprudence, by Dr. F. E. Daniel, of Austin; The Immediate Repair of Lacerations of the Perinæum, by Dr. J. M. Richmond, of Edna; Tubal Pregnancy and its Termination, by Dr. Joseph Price, of Philadelphia; Urethral Caruncle, by Dr. B. F. Brittain, of Arlington; Some Mistakes of Surgical Gynæcology, by Dr. Thomas A. Stoddard, of Pueblo, Col.; How to Dispose of Liquid Waste in Towns which have Waterworks, but no Sewers, by Dr. William M. Yandell, of El Paso; The State Care of the Insane, Epileptics, Inebriates, and Habitués of Narcotics, by Dr. F. S. White, of Terrell; Medical Education—its Defects and Perversions, by Dr. Joseph A. Mullen, of Houston; The Methods of Treatment of Secondary Cataract, by Dr. Henry Power, of London; The Eye in its Relation to Health, by Dr. H. L. Hilgartner, of Austin; The Relation of Ophthalmology to General Medicine, by Dr. Harry Friedenwald, of Baltimore; Eye Surgery by the General Practitioner, by Dr. E. J. Neathery, of Van Alstyne; Eye Troubles commonly Arising in General Practice, by Dr. G. W. Grove, of Kansas City; A Report of Cases, by Dr. Robert E. Moss, of San Antonio; The Nature of Glaucoma and the Method of Treating the Disease by Sclerotomy, by Dr. X. Galezowski, of Paris; The Ocular Effects of La Grippe, with a Report of a Case, by Dr. R. F. Miller, of Sherman; The Detection and Correction of the Errors of the Ocular Muscles, by Dr. Vard H. Hulen, of Galveston; The Relation Existing between the Diseases of the Eye and the Brain, by Dr. Robert F. LeMond, of Denver; Epilepsy as a Result of Nasal Obstruction, by Dr. Frank C. Todd, of Fort Worth; Cataract—Diagnosis and Treatment, by Dr. R. H. Chilton, of Dallas; Functional Impairment of the Auditory Centre as a Result of Catarrhal Deafness, by Dr. Joseph A. Mullen, of Houston; The Cure of Deviations of the Nasal Sæptum, by Dr. Vard H. Hulen, of Galveston; Some Notes on Laryngology, by Dr. Frank D. Boyd, of San Antonio; Erythema Multiforme following Circumcision, by Dr. R. W. Knox, of Houston; A Peculiar Rash accompanying Malarial Fever, by Dr. Allen J. Smith and Dr. William Gammon, of Galveston; The Pathology and Diagnosis of Pleural Effusions, by Dr. W. F. Starley, Jr., of Galveston; and The Coronary Circulation, by Dr. Allen J. Smith, of Galveston.

The Treatment of Leucocythæmia with Bone Marrow.—The following case, published in the *British Medical Journal* for April 4th, is related by Mr. J. R. Whait: A lady, aged fifty-six years, came under observation on September 20, 1894, complaining of pain in the left side, enlargement of the abdomen, dyspnœa, cough, weakness, and loss of flesh. There was nothing important in her history, except that during the menopause and since (menstruation ceased in 1891 at the age of fifty-three) she had a good deal of mental worry, to which she attributed her illness. In January, 1894, she found that

she was getting thinner, and in June or July that her abdomen was getting large and uncomfortable.

The patient was thin, but not at all anæmic-looking. The tongue was coated, the pulse 100, and the temperature, 99·4° F. The spleen was enlarged and extended downward to an inch and a half above the iliac crest and inward to a spot three inches and a half to the left of the middle line. It was firm but not tender. The liver reached two inches below the costal margin. The lymphatic glands were not enlarged. On the inner aspect of the left tibia the bone was thickened and very tender. There was no sign or history of hæmorrhage. The blood contained a large excess of leucocytes; the red corpuscles numbered 4,150,000 to a c. mm.; the leucocytes 329,360 to a c. mm., a proportion of from 1 to 12·6 red cells. The hæmoglobin was sixty per cent. of normal. There were numbers of poikilocytes and granule masses present. She was directed to take liq. arsenicalis, five minims three times a day, and the dose was increased by two minims every third day.

On September 27th the spleen was considerably larger. The blood remained unaltered.

On October 6th her condition was about the same as on September 27th, and she was then taking liq. arsenicalis, twelve minims three times daily.

Remembering the success with which Professor Fraser had treated a patient suffering from pernicious anæmia with bone marrow, says the author, he resolved to try it in this case. The treatment consisted in the administration of a dessertspoonful of ox bone marrow spread on toast three times a day with meals. The arsenic was continued as before. The patient began to improve almost immediately.

On October 9th the spleen was slightly smaller. The red corpuscles numbered 4,050,000 a c. mm. and the leucocytes 190,000 a c. mm., or from 1 to 21·3 red cells. The arsenic was producing gastric irritation, and the dose had to be diminished ten minims.

On October 26th the spleen was still smaller. The red corpuscles numbered 3,510,000 a c. mm., and the leucocytes 46,000 a c. mm., or from 1 to 76·3 red cells. Very few tailed red cells were left.

On November 10th both spleen and liver were greatly reduced; the red corpuscles had risen to 4,170,000 a c. mm. and the leucocytes had fallen to 25,000 a c. mm., or from 1 to 167 red cells. Ferri carb. sacchar., twenty grains three times a day, was added to the treatment.

On December 8th the red corpuscles were 4,200,000 to a c. mm. and the leucocytes 20,000 to a c. mm., or from 1 to 210 red cells. The hæmoglobin had risen to seventy per cent. By this time, however, says the author, marked symptoms of peripheral neuritis had appeared. The tongue was very white; the skin was dry and had a brownish hue. The hands and feet were suffused, tender, and benumbed. She was unable to perform the finer co-ordinative movements, and there was considerable jerking of the limbs. The prick of a pin anywhere on the soles of the feet or on the toes was imperfectly felt and localized. There was also tinnitus and deafness. The arsenic was again reduced, but the symptoms got steadily worse, and the bronzing of the skin became so marked as to suggest Addison's disease. It was universal, except for a small white patch of the size of a threepenny piece over the upper end of each sacro-iliac joint. The pigmentation was exaggerated at the nipples, the axilla, the umbilicus, etc. Speech became thick, the tongue dry and brown, and the urine scanty and loaded with urates. There was great desire for sleep, and for several days the patient slept twenty-two hours out of the twenty-four.

On December 24th the arsenic was stopped. The spleen still filled the whole left hypochondrium. The red corpuscles were 4,300,000 to a c. mm., the leucocytes 19,500 to a c. mm., or from 1 to 220 red cells. The fresh marrow had become very distasteful to the patient, and the author substituted for it tabloids of compressed marrow. Of these, six were given daily, and later increased to nine.

As the neuritis became worse, says the author, on December 28th hypodermic injections of strychnine were commenced (one one-hundredth of a grain three times a day), and by January 4th the patient could control the jerkings, and her grasp was much stronger. The dose of strychnine was increased to a sixtieth of a grain.

On January 12th all the symptoms had given way. Sleep was natural. The extremities were painful only to hard pressure, jerkings had ceased, and the bronzing and deafness were noticeably less. The spleen was not felt below the costal margin. The red corpuscles, 4,370,000 a c. mm.; the leucocytes, 14,500 a c. mm., or from 1 to 300 red cells. Hæmoglobin was eighty per cent.

On January 31st the color of the skin was normal. She had gained flesh and strength, and grasped as firmly as ever. There was pain only upon attempting to stand. Hearing was normal and so was the blood. Large sheets of epidermis peeled off the lower limbs.

On February 19th the spleen and liver were of normal size. The patient could fasten her clothes or pick up any small object, and cutaneous sensibility was restored. There was, however, some degree of footdrop, and the fingers were rather tapered. The tabloids of marrow, with tonics and massage, were continued until the end of May. She was very well in general health and could walk a little with help, although not without some pain. The spleen and blood had then been normal for several months, and it seemed possible, says Mr. Whait, that the leucocythæmia was cured. She then went away, and he saw nothing of her until early in August, when she came under treatment again. She stated that she had given up taking the marrow when she went away in May, and for a while had felt well, but that for the last five weeks had felt herself rapidly losing ground.

On August 7th all the original symptoms were present, the spleen larger than ever, reaching the iliac crest and laterally to a point an inch and a half to the right of the middle line; it was very tender. The liver reached two inches and a half below the costal margin, and was also tender. The red corpuscles numbered 3,070,000 to a c. mm.; and the leucocytes, 225,000 to a c. mm., or from 1 to 13·6 red cells. She was put on the use of marrow tabloids and ferri carb. sacch., and began to improve again at once.

On August 23d the spleen was to the left of the middle line and an inch above the iliac crest. The red corpuscles numbered 3,300,000 to a c. mm.; the leucocytes, 41,250 to a c. mm., or from 1 to 80.

On September 5th she was up and about her bedroom, and felt much better. The spleen and liver were considerably smaller. The red corpuscles were 3,700,000 to a c. cm.; the leucocytes, 21,760 to a c. cm., or from 1 to 170 red cells.

The patient progressed satisfactorily until September 30th, when she became very sick and breathless. The pulse was rapid and the temperature 102° F., and there were signs of pulmonary congestion and pleurisy. The face and upper and lower limbs were œdematous and tender. She did not respond to treatment, and gradually lapsed into a semi-comatose condition, and died during the night of October 7th.

The fatal chest complication, says the author, was attrib-

uted to undue exposure at her morning ablutions. He was unable to examine the blood after September 5th, but judging by her condition just previous to September 30th, he believes the blood had greatly improved in the interval.

On post-mortem examination, the spleen was found to be freely movable, smooth, and firm. It measured seven inches and a half by four inches and three quarters, and showed the typical leucocythæmic characters. The suprarenal bodies were greatly atrophied, being represented, in fact, by a little mass of firmly adherent connective tissue. The pericardium was distended with fluid, and the right heart much dilated. The left lung was adherent, as a result of old and recent pleurisy. The marrow of the rib bones was red. Mr. Whait did not examine that of the long bones.

Throughout both attacks the temperature exhibited an evening rise and morning fall. Generally speaking, there were short periods of mild pyrexia, with much longer intervals of apyrexia.

Most text-books, says the author, state that there is no means of checking developed leucocythæmia, that arsenic is the most valuable drug in its treatment, and that iron is useless. The impression he received, however, from watching this and one other case was that iron did help the patient, while in this case arsenic was undoubtedly responsible for the peripheral neuritis. The marked bronzing of the skin is interesting, he says, in view of the condition of the suprarenals as found post mortem.

Professional Secrecy and the Kitson-Playfair Case.—Last Sunday the *Sun* printed a letter from its London correspondent in which the following appeared:

"The now famous Kitson agt. Playfair case is at present the chief subject of popular discussion throughout the land. It is a discussion which is already waxing bitter, and if the medical profession be not careful and discreet it will lead to a reopening of the breach which undoubtedly existed until recent years between a large class of the English public and the average medical man. This prejudice, for such it was, may be described as a combination of vague fear and lack of confidence. Even now there are thousands of Englishmen abundantly able to employ a physician who would not do so except in the greatest extremity, some not even then.

"Last week's trial is already leading to a general public debate of the duties and relations of physician and patient. The sweeping public verdict in the Kitson-Playfair case has been in effect that a physician has no right to disclose a professional secret to any one except in the rare, if not impossible, circumstance of its being necessary in order to prevent the commission of a crime. Within a day or two it begins to appear that this verdict is not quite unanimous among laymen. Mr. Gladstone is the one important exception quoted. He is a warm personal friend of Dr. Playfair, and he writes to him that he considers that he did 'neither more nor less than his duty.' But Mr. Gladstone will have few supporters in an opinion which everybody will feel is influenced by personal friendship.

"One of the most interesting points which the public is considering is whether a doctor is justified in confiding his professional secrets to his wife. This question is certainly debatable, and there is some divergence of opinion manifested both within and without the profession. Justice Hawkins, who presided at last week's trial, raised the point, but he did not rule upon it, as it was not involved in the issue. He described it, however, as 'a nice question.' The English law has decided that the communication of a slander or a libel by a man to his wife is not publication, the theory being that a man and his wife are one. This is an old decision, however, and whether it would stand in these days of new women it is impossible to say.

"It was argued by several of the most eminent physicians in England who appeared in support of Dr. Playfair last week that a doctor has the right to betray professional confidence if necessary for the purpose of protecting his wife and family. Therefore, whatever may be said about Dr. Playfair's action in making a communication to Sir James Kitson about his patient, he had a perfect right to inform his wife that in his opinion Mrs. Kitson was not a suitable person for her to meet socially. The obvious answer in reply to this is that a doctor's family is not entitled to any special facilities for their social protection which a layman's family does not enjoy.

"Several writers have drawn parallels between the duty of a doctor and that of a member of the legal profession. Suppose, for instance, as may easily happen, that a personal friend of a lawyer consults him about a matter in which his (the client's) course has not been commendable or honorable. The lawyer may give his best professional advice, and the affair may be settled without publicity. Is the lawyer entitled to tell the story to his wife and family in order that they may cease to associate with the individual concerned? Certainly not is the unanimous reply. But the lawyer, if he chooses, may make this use of his professional knowledge: He can say to his client:

"'Now that this business is settled, I want to tell you that our intercourse hereafter must be purely professional. I shall respect your confidence, but I wish you to discontinue social relations with my family. If you are invited to my house, I expect you to decline the invitation.' And why are not a doctor's duty and privilege precisely the same?

"In Mrs. Kitson's case, it should be observed, she of her own volition wrote to Dr. Playfair that she would not cross his threshold until he had withdrawn his suspicions of her character. And yet he considered it his duty to inform his wife, to say nothing of Sir James Kitson, of those suspicions.

"The question of a physician's right and duty to violate professional confidence is being raised in other cases, actual and hypothetical. Thus a doctor writes to the *Times* yesterday saying he has a patient, a milkman, who is suffering from a loathsome and contagious disease, accompanied by an eruption on the hands and arms. There is great danger of this disease being communicated to his customers. According to the decision in the Kitson case, however, he believes he would be liable to grave penalties if he informed either the man's employer or customers of the danger. A doctor who is doubtful about his duty, or who hesitates to perform it in such a case, is of course not only a fool but a knave. His first step, of course, is to insist that his patient shall drop his present employment until cured. If the patient fails to act according to this advice, then he is willfully and knowingly imperiling the health and lives of many people, an action which is a crime under the common law; and nobody questions a doctor's right and duty to prevent serious crime at any cost. Raising this issue, therefore, is an absurd begging of the question."

Metallic Silver and Silver Lactate and Citrate in Surgery.—At a recent meeting of the Dresden Gesellschaft für Natur- und Heilkunde, as we learn from the *Deutsche Medizinal-Zeitung* for March 26th, Dr. Credé gave the results of his investigations of silver and some of its salts as antiseptics. He has satisfied himself that metallic silver, when brought into contact with colonies of schizomycetes, kills them without exerting any unfavorable action on the animal tissues. So it may be remarked that the late Dr. Marion Sims's choice of

silver wire as a material for sutures was happier than could be realized at the time. Credé says that aseptic wounds coated with silver foil remain aseptic for weeks at a time, and heal better than with any other dressing. Instead of silver foil, he has lately employed a dressing material made by Max Arnold, of Chemnitz, in the fabric of which metallic silver is intimately blended in such a manner as to admit of its being cut or torn into any shape desired. There is also a dressing in the form of a mull containing powdered silver that may with advantage be substituted for iodoform gauze in packing deep wounds.

Numerous experiments have shown that silver forms a lactate with the lactic acid produced in the metabolism of the micro-organisms, and that this compound kills them. Therefore it occurred to Credé to make direct use of *silver lactate*, instead of silver in the metallic state. This preparation, known by the trade name of *actol* or *aktol*, he thinks fulfills all the requirements of an antiseptic better than any other. He has given as much as fifteen grains of it subcutaneously without the least ill effect; there was only a slight burning pain at the site of the injection, lasting for but a few minutes. Silver lactate forms no insoluble compounds with the alkaline secretion of a wound or with tissue juice, as, for example, corrosive sublimate does, but only soluble ones, which gradually permeate the tissues and thus extend their action to some distance from the surface.

Silver citrate, however, seems to be quite as efficient and to be free from some minor disadvantages (not specified) of the lactate. The citrate has the trade name of *itrol*. Credé says that it is a perfectly harmless antiseptic and an excellent dusting powder for wounds. In the course of four months he has treated many hundreds of wounds with it, and with never the least untoward effect.

The Employment of Salol in the Treatment of Tuberculosis of the Bones.—The *Journal des praticiens* for April 4th contains a report of a recent meeting of the Société de chirurgie at which M. Reynier read a paper on this subject. In the presence of limited osseous tuberculosis, he said, which was just beginning, the surgeon often hesitated to interfere by trephining, as there was no exact information in regard to the limits of the field of operation. Grattage was practised and continued until a more resistant osseous tissue was met with, and the period of time necessary for cicatrization was uncertain; usually it occurred slowly; consequently relapses, fresh abscesses, and persistent fistulæ were to be feared. Even when cicatrization was obtained, he said, the bone might remain large and hypertrophied, and become a cause of restraint in the movements of the limb. If, said M. Reynier, the surgeon was assured of the benignity of the operation, and if it was easy to clearly establish its limits beforehand, intervention should be immediate.

In view of the difficulties attendant upon operations of this nature, M. Reynier employed a method of dressing which had been introduced by him in 1893. This dressing consisted of salol which was liquefied at a temperature of 104° F. and mixed with naphthol, aristol, and iodoform. If, after having trephined the bone and cleansed the tuberculous region, the cavity was filled with the melted salol, the latter would crystallize at 82° F. and obliterate the cavity entirely. In this way, said M. Reynier, a complete and aseptic occlusion was obtained. Furthermore, union by first intention of the subadjacent skin might be effected with this method of closure, which was similar to plugging of the teeth.

M. Reynier stated that he had operated on six patients and employed this dressing, with the result that he had obtained a rapid recovery in a few days after filling the osseous cavity with this antiseptic mixture, and that immediate union of the skin and the subcutaneous connective tissue had taken place.

Koch's Bacillus in the Non-tuberculous.—At a recent meeting of the *Société des sciences médicales de Lyon*, a report of which appears in the *Lyon médical* for March 29th, M. Frenkel said that in order to solve the question of latent microbism in the living organism we must turn our attention, not to the more or less pathogenic microbes which presented numerous varieties, such as the streptococcus, or the *Bacillus coli*, but to highly specialized agents in the presence of which the organism reacted in a peculiar manner. For this reason, said M. Frenkel, it would be interesting from a theoretical and practical point of view to ascertain if Koch's bacillus really existed in the organisms of non-tuberculous persons. The author stated that his researches had been made in the deep organs of the organism and he had chosen the bronchial ganglia as the object of his investigations. The examination of the bronchial and the mesenteric ganglia, he said, had given no useful results, with the exception of ten cases in which the bacilli had been sought for directly and by means of inoculation.

The direct examination of the ganglia had not revealed bacilli in any of the ten cases. Inoculation, however, had given a positive result in one case, in which the search for bacilli in the sections of a ganglion near one that had been inoculated had remained negative.

With regard to the lesions produced by these inoculations, said the author, they had been very attenuated, and extended only to the ganglia of the inguino-lumbar and subdiaphragmatic regions; there had been predominance on the inoculated side, but the liver, the spleen, and the lungs had been spared. In this case there had been secondary infection of the mesenteric ganglia, evidently of gastro-intestinal origin. In some of the caseified ganglia tuberculous bacilli had been found.

If the lesions of the mesenteric ganglia, said the author, had revealed a second heterochthonous infection in the tuberculized guinea-pig, it was evidently a question of self-infection from the wound in the thigh, which had suppurated abundantly during the first days after the inoculation.

The conclusions drawn by M. Frenkel from these investigations were as follows: 1. That in cadavers without any macroscopic tuberculous lesion, old or recent, there might be found bronchial ganglia which, on inoculation, revealed the presence of Koch's bacilli. 2. That these bacilli, which he had not discovered in the cadavers, were, nevertheless, of a very attenuated virulence, which fact did not agree with the results obtained by Pizzini, and still less with those of Loomis. 3. That the frequency of this tuberculosis, which M. Frenkel designated occult tuberculosis, was not so great as Pizzini's researches would lead us to suppose.

Lithium Preparations.—The *Therapeutische Wochenschrift* for April 5th mentions in a list of new remedies two preparations of lithium. The first is the American *tartarlithine*, or lithium bitartrate, $LiC_4H_5O_6.H_2O$, which has already been spoken of in this journal. The *Wochenschrift* remarks that it is much employed by American physicians in the treatment of Riggs's disease (pyorrhœa alveolaris), on the theory that that form of suppurative gingivitis is of a gouty nature. The calcareous collections about the roots of the teeth are said to contain, besides the ordinary calcium carbonate and phosphate, a considerable amount of uric acid, calcium urate, and sodium urate. Dr. E. C. Kirk is cited as having found tartar-

lithine a remarkably efficacious remedy in this affection, superior to any other lithium salt. Its diuretic action is manifest in many cases, but with some persons it acts as a laxative. Five grains may be given three times a day, dissolved in a glass of carbonic-acid water.

The other preparation is *lithium bromide*, which is described as a grayish-white granular powder, soluble in water and in alcohol. The efficacy of this compound in gout is attributed by Mendelsohn to its diuretic effect rather than to any action as a solvent of uric acid. Polakow has employed lithium bromide in acute and chronic parenchymatous nephritis, and found its diuretic action accompanied by diminution of the excretion of albumin and subsidence of œdema, even when the patients were not on a milk diet or subjected to any other remedial measures. Polakow uses lithium bromide in the following prescription:

℞ Lithium bromide..... 1 to 2 parts;
Sodium bicarbonate..... 4 "
Distilled water..... 200 "

M. Sig.: Three or four tablespoonfuls to be taken in the course of twenty-four hours.

The Semi-centennial of the American Medical Association.—At a meeting of the Philadelphia County Medical Society, held on April 15th, a committee was appointed to urge the members of the American Medical Association to favor the holding of a semi-centennial celebration of its organization. The society also instructed its delegates to invite the association to hold the meeting of 1897, which will be the semi-centennial, in the city of Philadelphia.

[Signed.] John B. Roberts, James C. Wilson, William M. Welch, } *Committee.*

A Collective Investigation of the Antitoxine Treatment of Diphtheria in Private Practice by the American Pædiatric Society.—The committee of this society to which this matter has been referred desires to place before the profession, for collective investigation, the subject of the antitoxine treatment of diphtheria, the cases for the investigation to be collected entirely outside of hospital practice and published as the report of the society.

Two points are to be made prominent: First, the length of time elapsing between the first appearance of the disease and the administration of the serum antitoxine. This is to be stated as accurately as possible even to fractions of a day. Second, the severity of the disease as shown by (*a*) extent of membrane; (*b*) general prostration; (*c*) involvement of the larynx.

As every one knows, bare figures may in no way adequately express the full facts; remarks are, therefore, called for, and it is hoped the contributors will give fully their impressions. A diphtheria patient under antitoxine may do very well and yet the physician reflect at the end that he might be expected to recover under any form of treatment. On the other hand, one requiring intubation may recover promptly and without even becoming much prostrated.

The laboratory investigators distinctly state that antitoxine acts in some way to prevent the damage to cells by the toxine of the *Bacillus diphtheriæ*. After the toxine has fatally injured the cells—a period approximately set down for guinea-pigs as three days—the antitoxine is not found efficacious to save the life of the animal. Furthermore, bacteriologists do not select decrepit guinea-pigs or those enfeebled by disease, but healthy half-grown pigs of a general-average bodily weight. Hence it is desirable that the constitutional condition of the patient shall be noted in every instance.

It is thought that family practice offers the only fair test of the efficacy of serum antitoxine treatment, and the most trustworthy statistics must be gathered from that source.

In these investigations we wish to bring together facts and opinions from cases which have what may be called a fair chance of demonstrating whether antitoxine accomplishes in the human body what experimentally it has been found to do with uniformity in animals.

We cordially invite the co-operation of members of the profession in this investigation, in return for which the society will mail to each contributor the full report when it is published. An abstract giving the main facts will, however, appear in the leading medical journals immediately after the meeting of the society in May.

Please fill out the accompanying blank and return it *at your earliest convenience* to either the president or the secretary of the society. Cases received after May 1st can not be included in the society's report.

In behalf of the society,

[Signed.] Joseph O'Dwyer, M. D., *President*,
967 Lexington Avenue, New York.
Samuel S. Adams, M. D., *Secretary*,
1 Dupont Circle, Washington, D. C.
L. Emmett Holt, M. D.,
William P. Northrup, M. D.,
Executive Committee of the Council.

The Blank.—Please reply to the following inquiries; if it is not possible to answer all of them, answer such as are positively known, even if but two or three:

1. *Age?* *Sex?*
2. *Condition—Good? Fair? Bad?*
3. *Time in fractions of a day, if known, from first appearance of the disease to first injection?*
4. *Was diagnosis confirmed by culture?*
5. *Number of injections made?*
6. *Extent of membrane—Tonsils?*
   Nose?
   Pharynx?
   Larynx?
7. *Operation—Intubation?*
   Tracheotomy?
8. *Complications or Sequelæ—Broncho-pneumonia?*
   Nephritis?
   Sepsis?
   Paralysis?
9. *Result?*
10. *Remarks; including other treatment, kind of antitoxine used, general impressions regarding the case, etc.*
11. *Name of reporter*.....*M. D.*
    Address.....

The Hebrew Sheltering Guardian Society Orphan Asylum.—We learn that the charges of mismanagement made by Dr. William M. Leszynsky against the president and board of managers of this asylum, which resulted in the resignation of the entire medical board, have been sustained by the investigating committee of the State Board of Charities, who have recommended measures for the better government of said institution.

Kosotoxin.—Handmann (*Arch. f. exper. Pathol. u. Pharmakol.*, xxxvi, 1, 2; *Ctrlbl. f. innere Med.*, April 4, 1896) has investigated this constituent of kousso flowers. He finds that it acts as a poison on muscular tissue, but has only a very slight effect on the nervous centres and none at all on the sensory and vasomotor nerves.

Original Communications.

OPERATIVE SURGERY AT THE CITY HOSPITAL,

WITH A PRELIMINARY REPORT ON THE STUDY OF WOUND INFECTION.*

BY GEORGE EMERSON BREWER, M. D.,
VISITING SURGEON, CITY HOSPITAL;
ASSISTANT DEMONSTRATOR OF ANATOMY,
COLLEGE OF PHYSICIANS AND SURGEONS.

I AM aware that a simple report of a number of ordinary and comparatively uninteresting surgical cases, occurring in the hospital service of one whose experience has been as limited as my own, offers little of interest to those more advanced in such work. I have, however, been led to make this report for the reason that the cases presented to me several interesting problems for solution, and not a few difficulties to be overcome, and for the additional reason that it may serve to correct an erroneous impression regarding the character of the surgical service of this institution.

In the accompanying table there will be found a record of every patient operated upon or anæsthetized with a view to operation in the surgical division of the City Hospital during a period of six months ending December 31, 1895. This table includes, in addition to a statement of a disease or injury for which the operation was undertaken, a record of the anæsthetic employed, the condition (whether clean or infected) of the wound area before and after the operation, and the general result. An analysis of these facts will form the subject of this communication, together with certain explanatory remarks and brief histories of some of the cases, which presented difficulties and interesting features.

The total number of cases brought to the operating table during the period covered by this report was 151. Of these, 147 received operative treatment, and in 4, after an examination, no operation was undertaken. The cases of operation may be regionally classified as follows: Upon the head, 9; upon the neck, 14; upper extremity, 12; lower extremity, 54; spinal column, 8; pelvic bones, 1; thorax, 1; breast, 1; abdomen, 10; kidney, 1; perinæum, 1; ischio-rectal region, 22; hernias, 13.

Anæsthesia.—In 133 cases, ether was used for anæsthesia; in 13, chloroform; in the remaining five cases the histories make no record of an anæsthetic, although cocaine was employed in one or two instances. No death or serious accident occurred as the result of the anæsthetic, although in one patient, to whom chloroform was administered for the removal of tubercular glands of the neck, complete cessation of respiration, with a rapidly declining pulse, occurred and lasted nearly three minutes. Inversion, artificial respiration, and hypodermic stimulation, however, resulted in his recovery, and the operation was completed under ether anæsthesia.

As a very large percentage of the patients admitted into our surgical wards are victims of chronic alcoholism, an annoying tremor occurred in a number of them during the administration of the anæsthetic. In one instance this was so severe as to merit special mention.

The patient was a muscular and, apparently, healthy middle-aged man. He was etherized for skin-grafting by the Thiersch method. Shortly after the operation was begun a marked tremor of the lower extremities occurred, and extended rapidly to the muscles of the trunk and arms. The shaking became so violent that he had to be held upon the table. As there was considerable lividity of the skin, a large amount of air was given with the ether until he became partly conscious. This, however, did not seem to relieve the tremor, and the anæsthetic was pushed to the most complete intoxication, with dilated pupils and puffing respiration. No cessation, however, took place in the tremor, and the use of the anæsthetic was again discontinued and again resumed. After he became thoroughly anæsthetized the second time, the tremor diminished sufficiently to allow the operation to proceed. A few moments later, and without any apparent cause, the symptoms again appeared with marked severity, and the operation had to be temporarily suspended. This was repeated at intervals, and so delayed our work that an operation which under ordinary circumstances would not have required more than fifteen or twenty minutes was prolonged to considerably more than an hour. No injurious effects, however, followed the etherization.

Of the nine operations upon the head, two were for lacerated wounds of the scalp, which had been neglected and were in an acutely septic condition. These were freely opened, thoroughly cleansed, curetted, partly united, and dressed aseptically. Both patients recovered promptly. In six cases of cellulitis, in which the parts were freely incised, curetted, irrigated, and packed, recovery occurred without incident. Two patients were operated upon for epilepsy, which had apparently followed injuries resulting in depressed fractures of the skull.

The first case was that of a young man, twenty-six years of age, who had sustained an injury five years before, resulting in a marked depression of the skull near the upper anterior angle of the left parietal bone. Previous to this he had enjoyed perfect health. Following the injury, however, epileptoid convulsions had occurred and increased in frequency to such an extent as to render him a hopeless invalid. As the convulsions frequently began by violent lateral movements of the head to the right, and as the seat of the injury was over the posterior extremity of the first left frontal convolution, by the advice of Dr. E. L. Fisher, attending neurologist to the hospital, who saw the case in consultation, an operation was undertaken. A large omega-shaped incision was made over the motor area, and extending to the posterior margin of the depression. The bone, still adherent to the soft parts, was chiseled through and broken off in the usual manner. At the point of greatest depression of the inner plate of the skull the dura was found to be firmly adherent and thickened. This was separated, and the depressed bone removed by a rongeur forceps. The dura was then opened by a semicircular incision and the motor tract exposed. Nothing abnormal was found. The arm and face centres were verified by electrical stimulation applied directly to this region by Dr. Fisher. The dura was united by fine catgut, the bone replaced, and the soft parts sutured. A sterilized gauze

* Read before the Harvard Medical Club, March 28, 1896.

and cotton dressing was applied; the recovery was uneventful. The wound was dressed on the fourth day and half the cutaneous sutures removed; again on the fourteenth day, when the whole wound was found to have united by first intention.

The second case, in which also the operation was done by the advice and with the assistance of Dr. Fisher, was that of a man about fifty years of age, who had been the subject of severe epileptic seizures for many years. He also presented a very deep oblong depression of the skull over the region of the posterior extremity of the left third frontal convolution. Certain peculiarities of speech which were present pointed strongly toward the belief that the depressed bone had produced more or less injury to the brain of this region. A large omega-shaped incision was made over the motor area and extending to the posterior margin of the depression, a bone flap removed, and the dura incised. The depressed inner table of the skull, lined with very thin adherent dura, was found to have pressed markedly upon the brain at this point, and the underlying convolution was much atrophied. All the depressed bone was cut away, the dura united, the bone flap replaced, and held in position by interrupted skin sutures. No reaction followed the operation, and the wound united throughout by first intention.

Of the fourteen operations on the neck, one was for a large carbuncle, which was cured after extensive crucial incisions. Eight cases of cellulitis, including a typical case of Ludwig's angina, were treated by incision, curetting, and packing with sterilized gauze. Of these, six patients recovered, one was improved, and one was still in the hospital, but nearly well, when I transferred the service to my successor. Five operations for the removal of tuberculous glands were undertaken; two of these were very extensive, and required an incision reaching from the mastoid to the clavicle. All of the patients were discharged well. The spinal accessory nerve was resected in one case for an unusually severe torticollis which had resisted careful and thorough medical treatment. The incision was made over the upper anterior border of the sterno-mastoid muscle, and three quarters of an inch of the nerve resected. The patient was discharged improved.

Of the twelve operations upon the upper extremity, only one deserved special mention. This was a marked deformity of the hand, resulting from a Dupuytren's contraction of the palmar fascia, involving the thumb and little finger, together with complete ankylosis of the phalangeal joints from chronic gout. The difficulties of the case were fully stated to the patient, who begged for any operation which would even partly relieve the deformity. The thickened and contracted band of fascia, with the overlying skin, was thoroughly dissected out, and the resulting space filled in with healthy tissue by means of a plastic operation. The wound was found completely united at the first dressing, and, although the ankylosed finger joints remained stiff, as the chief deformity had been relieved, the case may be fairly entered as a recovery.

Of the remaining eleven operations on the upper extremity, four were amputations, two were excisions of necrosed phalanges, three were for wounds, and two for cellulitis. In all of these recovery took place.

Of the fifty-four operations on the lower extremity, there were eight amputations, with six recoveries, one death, and one convalescent still in the hospital.

The fatal case was that of an extremely old and debilitated woman with diabetes and chronic nephritis. She was transferred from one of the other hospitals after an amputation of one of her toes, presumably for diabetic gangrene. The wound was acutely septic, and a rapidly increasing gangrene of the foot occurred. An amputation of the leg was proposed as the only chance of saving the patient's life, and was performed at the request of her husband. Death resulted at the end of a week, from uræmia. The wound had united by first intention.

One extensive and acutely septic lacerated wound of the leg, also transferred to our wards from another hospital, was cleaned and dressed under ether, without improvement, but later the patient submitted to an amputation. Twelve cases of abscess or minor wounds were submitted to operative treatment, with ten recoveries, and two (extensive burrowing of pus from chronic bone disease) in which no improvement followed. There were two cases of necrosis of the tibia; one patient is still in the hospital; the other was not improved by curetting, and refused further operative treatment. One case of extensive necrosis of the tarsus was unimproved as the result of a partial operation, but later the patient made a rapid recovery after amputation of the leg. Two hæmatomata were opened and sutured, three excisions of the metatarso phalangeal joint were made, one ingrowing toenail was removed, two deformities from vicious union were refractured, all with excellent results. One ununited fracture was wired, the patient being now convalescent in the hospital. The adhesions in two ankylosed joints were broken up, with one recovery and one patient still in the hospital. One excision of the hip was performed for tuberculous disease, which had been treated for several months by rest and extension, without improvement. The patient died at the end of seven weeks from general tuberculosis. Twelve ulcers of the leg were treated, ten by Thiersch graft, two by curetting, with eleven recoveries and one improved. Three cases of varicose veins were treated by excision. One of these was very extensive, requiring on both legs the excision of eleven venous sections; all of the patients promptly recovered. The knee joint was opened three times, once for septic synovitis, once for the removal of a dislocated semilunar cartilage, and once for exploration. All of the patients recovered with good motion.

Of the eight patients operated upon for disease of the spine, two excisions of the coccyx for obstinate coxalgia recovered, two tuberculous abscesses were opened and drained with substantial improvement. One tuberculous abscess was injected with iodoform emulsion and completely healed. Another treated in the same manner was not improved.

In the seventh case of this series the patient was transferred from one of the medical wards with the diagnosis of a probable new growth pressing upon the mid-dorsal region of the cord. He was afterward seen in consultation by one of the attending neurologists of the hospital, who advised an exploratory laminectomy. As the outlook was not encouraging, an operation was only undertaken after a written request from the patient, in which he stated that he was well aware of the risks and unfavorable prognosis. The operation demonstrated an absence of new growth, but the presence of

a thickened dura, due to caries of the body of the fifth dorsal vertebra. The patient died four weeks later without improvement in his symptoms other than a complete cessation of the painful muscular contractions which had been present up to the time of the interference.

The last case of this series was also a fatal case. My attention was urgently called to the patient by the house surgeon at my first visit to the hospital. She had been suffering from chills, high fever, and profuse sweating ever since her admission. There was a large retroperitoneal collection of pus in the right flank, which was slowly discharging through a minute opening. As the patient could speak no English, and as no history could be obtained, it was thought that we had to do with a circumrenal suppuration of long standing. An exploratory operation revealed the presence of two necrosed vertebral bodies lying free in the enormous abscess cavity. These were removed and the wound was thoroughly irrigated and packed. Marked improvement followed the operation for a few days, but the patient died two weeks later. The autopsy showed pulmonary tuberculosis, chronic nephritis, and amyloid degeneration of the organs.

A case of fracture of the pelvis, with extensive wound of the bladder, was transferred to our wards with the patient in a profoundly septic condition. He had been under treatment at one of the other hospitals for a week or more, and at his entrance presented a large, foul suprapubic wound leading down to the lacerated bladder. At the bottom of this wound was found the inverted median segment of the broken horizontal ramus of the left pubic bone, which was violently pressed backward into the bladder wound at each movement of the patient's body. He was delirious, with fever, dry tongue, and great prostration. Over the chest and abdomen were a large number of septic cutaneous ulcers resembling chancroids. Although the condition of the patient seemed hopeless, he was etherized, the wound and abdomen were disinfected as thoroughly as possible, the bones were brought into position and wired, the septic ulcers were curetted, the bladder and suprapubic wound were thoroughly packed, and the trunk and legs were surrounded by a plaster-of-Paris cast. A special nurse was assigned to him, and one of the house staff was in almost constant attendance, changing the dressing as often as ten or twelve times a day. In spite of our efforts he rapidly failed, and died in about ten days, of general sepsis.

Of the operations on the trunk, in five, for wounds and sinuses of the abdominal wall, the patients recovered. One breast was successfully amputated for chronic suppuration; a portion of the first rib was excised for caries, with recovery. Two attempts were made to close a large cæcal fistula in the same patient without success. Death followed an attempt to close an old inguinal colotomy wound. The abdomen was not opened; the operation simply consisted in freshening and suturing the edges of the fistula. The patient did well for several days, when the wound parted; later she had symptoms of uræmia, and died in about two weeks without fever or abdominal symptoms. No autopsy could be obtained. Two laparotomies were performed during my service. In one, for exploration, the patient recovered without incident. In one, for gastro-enterostomy, the patient died on the sixth day after four days of normal temperature and pulse. The autopsy showed primary union of abdominal wound, an absolutely aseptic peritoneal cavity, and a perfect anastomosis. The specimen from this case, together with the history, was presented before the Surgical Section of the Academy of Medicine at the February meeting.

Twenty-two operations were performed on the ischio-rectal region. Of these, six were for hæmorrhoids, ten for ischio-rectal abscess, and six for fistula. All the patients were discharged well.

The only case in which an operation upon the kidney was undertaken was one transferred from the gynæcological service of the hospital.

The patient, a young woman, about twenty years of age, was suffering from uretero-vaginal fistula, the result of a vaginal hysterectomy. Some months after her original operation an unsuccessful attempt was made to implant the divided ureter into the posterior wall of the bladder. As her infirmity precluded the possibility of her resuming her work as a domestic servant, nephrectomy was proposed as the only procedure which would offer hope of permanent relief. This was readily accepted by the patient after a candid statement of the dangers of the operation. She was accordingly etherized, and an attempt made to catheterize the ureters, with a view of confirming the diagnosis. This was unsuccessful, owing to the depression of the base of the bladder following the removal of the uterus. An incision was made into the right lumbar region and the kidney exposed and drawn into the wound. The ureter was then seized and injected with a solution of methyl blue, which promptly appeared at its vaginal opening. The pedicle was ligated by means of four heavy braided silk ligatures, the wound partly closed, and packed with sterilized gauze. The patient did well until the fourth day, when a small collection of pus was found in the neighborhood of the buried cut end of the ureter (presumably due to my carelessness in failing to thoroughly cauterize the stump). This was evacuated and the small cavity packed, and she made a rapid and satisfactory recovery. Six weeks after the operation, and after the practical healing of the wound, she suddenly exhibited symptoms of acute uræmia, and her life was only saved by the extreme care and watchful personal attention of Dr. H. B. Deady, my house surgeon. Three months after the operation she was discharged well.

Twelve operations for hernia occurred during the period covered by this report. Of these, one was for the relief of strangulation, and in eleven the Bassini operation for radical cure was performed.

In the case in which the operation for the relief of strangulated hernia was undertaken, the patient was admitted to the service early in September, suffering from an easily reducible right inguinal protrusion. He requested an operation, but this was refused, as he was found to be suffering from chronic nephritis, uræmia, and alcoholism. He remained under observation in the hospital for nearly three months, but at no time did his condition warrant any operative procedure. On December 9th I was hastily summoned, and found him suffering from all the symptoms of strangulation which had existed for some ten hours. His condition was extremely bad; temperature, 97·5°; rapid and feeble pulse; œdema of both lungs. He was told that an operation for the relief of the strangulated gut offered him his only chance, and at his request the operation was quickly performed under ether. A temporary improvement in his condition followed the operation for a day or two, but the uræmic symptoms gradually deepened, and he died on the sixth day.

The hernial wound was found, on autopsy, to have united throughout by first intention.

In the eleven cases operated upon by the Bassini method, all of the patients recovered from the operation, and when last seen presented no symptoms of recurrence. In one case death occurred from cerebral thrombosis six weeks after the operation, and after a complete healing of the wound, as demonstrated by an autopsy, a report of which was read before the surgical section of the Academy of Medicine at the December meeting. Only one of these cases deserves special mention.

The patient was a strong and vigorous man, about sixty years of age. He had suffered for twenty years from a progressively increasing right inguinal hernia. During the last year he had lost his position on account of his infirmity, and entered the hospital in the hope that something could be done to enable him to resume his work. Upon examination, an enormous hernia was discovered, which extended halfway to his knees and measured twenty-two inches in circumference. As it could be reduced to a small size, and as the abdominal ring was comparatively narrow, an operation for its relief was undertaken. When the sac was opened, about twelve feet of small intestine and from one to two pounds of omentum were found within. Six or seven inches of the intestine were firmly adherent to the bottom of the sac and were separated with considerable difficulty. The sac and omentum were ligated with silk, the conjoined tendon was united to Poupart's ligament with kangaroo tendon, and the aponeurosis and skin were sutured with silkworm gut. The first dressing was removed on the eighth day, when the wound was found to have united by first intention. He was kept in bed for six weeks, and has now been up and about for four months, without any sign of recurrence.

The last case of this report was a peculiar and unusually interesting extravasation of urine. The patient, an Italian, thirty-six years of age, was transferred from one of the other hospitals with a diagnosis of "inoperable" carcinoma of the rectum. His condition at entrance was that of profound sepsis, with high fever, delirium, and an extremely weak pulse. Upon examination, the entire ischio-rectal region was markedly bulged outward and indurated, with four or five large gangrenous areas around the margin of the anus. The mucous membrane of the gut was everted, and of a dark purple color. A subcutaneous cellulitis extended for some distance on the inner and posterior aspect of each thigh. The entire perineal region was a mass of boggy induration, which, however, did not extend far into the scrotal tissues. Several small fistulous openings were present, surrounded by areas of grayish ulceration, which might have suggested the diagnosis of carcinoma. Under ether anæsthesia an examination of the urethra revealed the presence of an extensive stricture in the bulbous region, which admitted with great difficulty the finest filiform guide. Upon this a Gouley tunneled sound was introduced, and an external perineal urethrotomy performed. A large abscess cavity was found surrounding the urethra near the apex of the prostate. This opened downward into the ischio-rectal fossa, which was filled with gangrenous sloughs. Free incisions were made in every direction, and the necrotic tissues thoroughly removed. As the result of this very extensive removal of tissue the rectum lay free in the now empty ischio-rectal fossa, attached only at its upper portion to the pelvic diaphragm. A No. 38 French perineal rubber tube was used to drain the bladder, and the wound thoroughly packed with sterilized gauze. The patient's condition during the last few moments of the operation was extremely critical, and his life was only saved by the most energetic stimulation. He made an uneventful recovery, and the urethra is now free to 32 F. from meatus to bladder.

A recapitulation of the results obtained in this series of 151 cases will show that 118 patients recovered as the result of operative treatment, 8 were improved, 7 not improved, 8 died, 4 were simply examined, and 6 are still in the hospital.

Study of Wound Infection.—By far the most interesting feature of my service, however, was the opportunity which it offered of making a more or less systematic study of wound infection and its prevention. It was a matter of considerable surprise to me that methods which, in private practice, had served to render and keep aseptic regions invaded by operative wounds, utterly failed in the surgical wards of the City Hospital. During the month of May forty-three operations were performed. In six of these, the region to be operated upon was presumably in an aseptic condition, and the resulting wounds should have healed by first intention. In all, suppuration occurred; and, although in the remaining thirty-seven cases, which were septic at the time of operation, in seven asepsis was established, and the resulting wounds were absolutely free from pus, the showing, as regards our technics, was extremely bad. The following is the plan adopted during this period: The patient was brought to the operating table, and the region to be operated upon was scrubbed for three or four minutes with green soap and hot water, a sterilized brush being used. The skin was then douched with ether, and finally with a solution of bichloride of mercury, 1 to 2,000. The patient was then covered with dry sterilized towels. The dressings, gowns, sheets, and gauze sponges were sterilized for one hour in the Arnold sterilizer. The instruments were boiled for half an hour in a one-per-cent. solution of sodium carbonate and then placed in 1-to-40 carbolic. The ligatures and suture material were treated by immersion for half an hour in a 1-to 20 carbolic solution, then boiled for one hour in a 1-to-80 carbolic solution. The operator and all assistants were clothed in sterilized gowns, and their hands prepared by scrubbing with soap and water for three or four minutes and then immersing them in a 1-to-2,000 bichloride solution for about two minutes. Irrigation by a sterilized normal salt solution.

As soon as it became evident that our results were imperfect, an attempt was made to improve our technics. The sources of infection were thought to be in one or more of the following conditions: First, imperfect sterilization of the hands; second, imperfect sterilization of the patient's skin; third, insufficient and loosely applied dressings, allowing infection by patient's hands during convalescence (one patient admitted having scratched his wound on the fourth day under the dressing); fourth, infection from dandruff falling into the wound during operation; fifth, imperfect sterilization of towels and dressings; sixth, imperfect sterilization of ligatures and suture material; seventh, contamination of the hands or dressings through carelessness; eighth, rough handling of the divided tissues.

The first improvement which was made was in the

method of preparing the hands. Sterilized nail cleaners were provided, the hands scrubbed for fully five minutes with at least two changes of water, then immersed in a 1-to-1,000 solution of permanganate of potassium, later in a solution of oxalic acid, and finally, for three minutes, in 1-to-2,000 bichloride solution. This plan was carried out during my entire service, with the exception of a short period when, as a result of two or more rather startling evidences of faulty technique, ten minutes' scrubbing was insisted upon. This, however, was discontinued, as it rendered the hands sore and too rough to be easily cleansed for subsequent operations.

Various methods were introduced of sterilizing the wound area, including the use of the soap poultice and prolonged wet bichloride dressings. The method finally adopted was to have the parts scrubbed for ten minutes the day before the operation, when this was possible, a wet bichloride dressing left on over night, the part scrubbed again the following morning, and a wet bichloride dressing again applied. This was removed on the operating table and the part douched with ether, bichloride, and sterilized salt solutions.

To avoid contamination of the wound by falling dandruff, sterilized gauze caps were provided and worn in every clean case by all who came in contact with the patient. For a period of two weeks or more wet bichloride towels were used around the wound, but later, the dry, freshly sterilized towels were again employed.

As the hospital possessed no suitable apparatus for boiling our ligature and suture material in alcohol under pressure, the following method was adopted. The gut was scrubbed with soap and water for fifteen or twenty minutes; then immersed for twenty-four hours in ether, for twenty-four hours in absolute alcohol, for twenty-four hours in a 1-to-2,500 solution of biniodide of mercury in chloroform. It was then placed in a 1-to-80 solution of carbolic acid.

These changes, together with several minor improvements regarding the preparation of the operating table, instrument trays, and the clothing of the patient, were gradually introduced during the months of June, September, and October. The handling of the ligatures, suture material, and the dressings was reduced to a minimum, and more care in the treatment of the divided tissues attempted. The results, though much better than at first, were still very imperfect, and after the complete healing, without infection, of two rather extensive operative wounds, in which Van Horn and Ellison sterilized gut was employed, it was thought that our ligature and suture material was at fault. Accordingly, the following plan was adopted, which served also to exclude infection from contaminated hands and dressings. A patient was brought to the operating table for the Bassini operation for hernia. He was prepared in the manner described above. The instruments and dressings were sterilized in the usual way, but the sterilizers brought to the operating room unopened. After disinfecting my hands in the most thorough manner, I had the instrument sterilizer opened, and laid out the few instruments to be used in the trays. I also removed the gauze sponges and placed them in salt solution. The towels were next removed and placed in a sterilized basin. I then had the dressings removed from the wound area and personally rescrubbed and douched the skin. After again disinfecting my hands, I applied the towels and proceeded to operate without assistance. My house surgeon was prepared and ready to assist, if necessary, but the only service he rendered was to draw upon a long fold of sterilized gauze which was used to retract the spermatic cord during the application of the deep sutures. His hands never came near the wound, and even when the gauze was withdrawn the part in contact with his fingers was cut away. The operation was completed, the wound closed and dressed, without a single person, other than myself, touching it, the instruments, ligatures, or dressings. Van Horn and Ellison gut was used. No reaction followed the operation—first dressing on the fourteenth day, primary union throughout. In this operation, and in many which followed, one of the house staff was detailed as censor, whose duty it was to stand in a position where every step of the operation could be watched, and to instantly condemn any hand, instrument, sponge, or dressing which, by any accident, was brought in contact with unsterilized material. By this means many errors in technique were avoided which would otherwise have passed unnoticed. The next operation was carried out in exactly the same manner, with the exception that one of the house staff assisted. At the third operation, two of the house staff assisted; later, one nurse was admitted, but the same plan carried out in every other respect, which was followed in every clean case during the remainder of my service. As these cases remained under the first dressing for from four to fifteen days, the results were not known until a number of cases had been operated upon. It was found, however, that the second patient, in whose case one of the house staff assisted, showed, during convalescence, signs of suppuration, which, however, did not appear until after the second dressing, and it is not improbable that infection occurred at that time. One other case only showed any sign of infection, and that was one in which some of the hospital gut was used. With these exceptions, every clean case operated upon during the last month of my service remained aseptic, and in all septic cases in which it was possible to expect a clean wound after operation asepsis was established, with but one exception, and that was a Thiersch grafting in which a very small amount of pus was found under one strip of the rubber tissue, the rest of the wound being perfectly clean.

A glance at the tabulated list of cases, given below, will show that of the one hundred and fifty-one cases, one hundred and six were infected at the time of operation, thirty-eight were clean, and in seven no incision was made. In sixty-four of the infected cases, the conditions were such as to render complete and permanent sterilization of the operative wound wholly out of the question; and, although under rigid cleanliness the patients, as a rule, made rapid and satisfactory recoveries, they all, at times, exhibited evidences of more or less suppuration. In the remaining forty-two patients, who were infected at the time of operation, an attempt was made to render the wounds clean, and to bring about healing by primary union or granulation

without suppuration. This succeeded in twenty-eight and failed in fourteen instances. Percentage of success, 66·67.

Of the thirty-eight cases which were presumably clean at the time of operation, twenty-three remained aseptic and fifteen showed evidences of infection. In several of the latter only a minute stitch infection was found, without a rise of temperature, and often with primary union of the wound. They are, however, classed as infected cases, as they demonstrate some error in technics. If we compare the results obtained during the first three months with those occurring during the last three months, when our technique was much more perfect and our assistants better trained, it will be seen that a decided improvement occurred, which I believe to be directly due to our improved methods. Fifteen clean cases were operated upon during the first three months, of which ten, or sixty-six per cent., suppurated, and five, or thirty-three per cent., remained aseptic. During the last three months, however, of twenty-three clean cases operated upon, five, or twenty-one per cent., only suppurated, and eighteen, or seventy-nine per cent., showed no sign of infection.

As a large proportion of the patients admitted to our wards are in a wretched condition of malnutrition from syphilis, tuberculosis, chronic alcoholism, and insufficient food, it is not surprising that our results should be inferior to those obtained in institutions where the more fortunate classes are treated; for it is a well-known and generally accepted fact that a vigorous and healthy organism can often overcome without local or general reaction an amount of wound infection which would give rise to local suppuration and marked systemic disturbance in one whose vital forces were greatly reduced by disease or dissipation.

While the writer believes that this fact may account for a certain amount of suppuration following operations on clean cases, it by no means can account for the number of infected cases observed during the first few months of this period, as evidenced by the almost perfect results which occurred during the last month of the service as a sequence of our improved technics.

I may say, in conclusion, that it is my purpose to continue these experiments and, if necessary, to inaugurate a series of bacteriological investigations with a view to locating and removing any other source of infection which up to the present may have escaped detection; after which it may be possible to gather some data which may help to solve the question of how much (if any) unavoidable suppuration may be expected in this class of cases.

Case No.	Anæsthetic.	Patient's condition.	Disease.	Operation.	Result.	Asepsis.
1	.....	Septic.	Cellulitis of shoulder.	Incision and drainage.	Recovery.	
2	Ether.	Septic.	Cellulitis of neck.	Incision and packing.	Recovery.	
3	Ether.	Septic.	Gunshot wound of flank.	Exploratory operation.	Recovery.	
4	Ether.	Septic.	Compound fracture of fingers.	Amputation.	Recovery.	Established.
5	Ether.	Septic.	Cellulitis of leg.	Incision and drainage.	Recovery.	
6	Ether.	Septic.	Artificial anus.	Closure.	Death.	
7	Ether.	Septic.	Compound fracture of finger.	Amputation.	Recovery.	Established.
8	Ether.	Septic.	Tubercular abscess of neck.	Incision and curetting.	Recovery.	
9	Ether.	Aseptic.	Coxalgia.	Excision of coccyx.	Recovery.	Lost.
10	Ether.	Septic.	Ulcer of leg.	Thiersch graft.	Recovery.	Established.
11	Ether.	Septic.	Ulcer of leg.	Thiersch graft.	Recovery.	Established.
12	Ether.	Septic.	Ulcer of leg.	Thiersch graft.	Recovery.	Established.
13	Ether.	Septic.	Necrosis of first rib.	Excision and packing.	Recovery.	
14	Ether.	Septic.	Chronic mastitis.	Amputation of breast.	Recovery.	
15	Ether.	Septic.	Hæmorrhoids.	Ligation and excision.	Recovery.	
16	Ether.	Aseptic.	Tubercular gland of neck.	Excision.	Recovery.	Lost.
17	Ether.	Septic.	Ulcer of leg (2).	Thiersch graft.	Improv'd.	
18	Ether.	Septic.	Cellulitis of scalp.	Incision and packing.	Recovery.	
19	Ether.	Septic.	Ischio-rectal abscess.	Incision and curetting.	Recovery.	
20	Ether.	Aseptic.	Right inguinal hernia.	Bassini operation.	Recovery.	Lost.
21	Ether.	Aseptic.	Adenoma of neck.	Excision.	Recovery.	Lost.
22	Ether.	Septic.	Cellulitis of cheek.	Incision and suture.	Recovery.	Established.
23	Ether.	Septic.	Ingrowing toe-nail.	Excision.	Recovery.	
24	Ether.	Aseptic.	Torticollis.	Resection of 11th nerve.	Improvement.	Lost.
25	Ether.	Septic.	Fistula in ano.	Incision, curetting and packing.	Recovery.	
26	Ether.	Septic.	Cellulitis of face.	Incision.	Recovery.	
27	Ether.	Aseptic.	Compression myelitis.	Exploratory laminectomy.	Death 4th wk.	Lost
28	Ether.	Septic.	Sinus of leg.	Incision, curetting and packing.	Recovery.	
29	Ether.	Septic.	Compound fracture of toe.	Amputation.	Recovery.	Established.
30	Ether.	Septic.	Cellulitis of neck.	Incision, curetting and packing.	Recovery.	
31	Ether.	Septic.	Ischio-rectal abscess.	Incision, curetting and packing.	Recovery.	
32	Ether.	Septic.	Ischio-rectal abscess.	Incision, curetting and packing.	Recovery.	
33	Ether.	Septic.	Ischio-rectal abscess.	Incision, curetting and packing.	Recovery.	
34	Ether.	Septic.	Tubercular abscess of neck.	Incision and curetting.	Recovery.	
35	Ether.	Septic.	Ulcer of leg.	Curetting.	Recovery.	
36	Ether.	Septic.	Fistula in ano.	Incision, curetting and packing.	Recovery.	
37	Ether.	Septic.	Hæmorrhoids.	Ligation and excision.	Recovery.	
38	Ether.	.....	Obscure injury of leg.	Examination under ether.	Recovery.	
39	Ether.	Septic.	Tubercular abscess of neck.	Incision, curetting and packing.	Improvement.	
40	Ether.	Septic.	Ischio-rectal abscess.	Incision, curetting and packing.	Recovery.	
41	Ether.	Septic.	Tubercular osteitis of great toe.	Excision.	Recovery.	
42	Ether.	Septic.	Caries of lumbar vertebræ.	Treves's operation; 2 vertebral bodies removed.	Death 2 wks; autopsy, amyloid organs.	
43	Ether.	Septic.	Dorsal caries.	Exploratory incision.	Improvement.	

Case No.	Anæsthetic.	Patient's condition.	Disease.	Operation.	Result.	Asepsis.
44	Ether.	Septic.	Lumbar caries; extensive abscess; septic.	Incision and drainage.	Improvement	
45	Ether.	Septic.	Fistula in ano.	Incision, curetting and packing.	Recovery.	
46	Ether.	Septic	Cellulitis of neck.	Incision, curetting and packing.	Recovery.	
47	Ether.	Septic.	Cellulitis of axilla.	Incision, curetting and packing.	Recovery.	
48	Ether.	Septic.	Hæmorrhoids.	Clamp and cautery.	Recovery.	
49	Ether.	Septic.	Carbuncle of neck.	Incision, curetting and packing.	Recovery.	
50	Ether.	Septic.	Periostitis of tibia.	Incision, curetting, suture, packing.	Recovery.	Established.
51	Ether.	Septic.	Fistula in ano.	Incision, curetting and packing.	Recovery.	
52	Chloroform.	Septic.	Tubercular abscess of neck.	Incision, curetting and packing.	Recovery.	
53	Ether.	Septic.	Uretero-vaginal fistula.	Nephrectomy.	Recovery.	
54	Ether.	Septic.	Abscess of axilla.	Incision, curetting and packing.	Recovery.	
55	Ether.	Septic.	Infected scalp wound.	Incision and packing.	Recovery.	
56	Ether.	Septic.	Septic synovitis of knee.	Incision and drainage.	Recovery.	Established.
57	Ether.	Septic.	Caries of alveolar process.	Curetting.	Recovery.	
58	Ether.	Septic.	Fistula in ano.	Incision, curetting and packing.	Recovery.	
59	Ether.	Septic.	Ischio-rectal abscess.	Incision, curetting and packing.	Recovery.	
60	Ether.	Septic.	Prepatellar bursitis.	Incision, curetting and suture.	Recovery.	Established.
61	Ether.	Aseptic.	Inguinal hernia.	Bassini operation.	Recovery.	Lost.
62	Ether.	Aseptic.	Inguinal hernia.	Bassini operation; died in six weeks from cerebral thrombosis.	Recovery.	Lost.
63	Ether.	Septic.	Fracture of pelvis; laceration of bladder.	Wiring of bones.	Death.	
64	Ether.	Aseptic.	Metatarso-phalangeal arthritis.	Excision.	Recovery.	Maintained.
65	Ether.	Aseptic.	Metatarso-phalangeal arthritis.	Excision.	Recovery.	Lost.
66	Ether.	Septic.	Tuberculosis of hip.	Excision.	Death.	
67	Ether.	Aseptic.	Inguinal hernia.	Bassini operation.	Recovery.	Maintained.
68	Ether.	Aseptic.	Dislocated semilunar cartilage of knee.	Removal.	Recovery.	Maintained.
69	Ether.	Septic.	Necrosis of tarsus.	Resection and curetting.	Not improv'd.	
70	Ether.	Aseptic.	Necrosis of tarsus.	Amputation of leg.	Recovery.	Maintained.
71	Ether.	Septic.	Cellulitis of leg.	Incision, curetting and packing.	Recovery.	
72	Ether.	Aseptic.	Coxalgia.	Excision of coccyx.	Recovery.	Lost.
73	Ether.	Aseptic.	Inguinal hernia.	Bassini operation.	Recovery.	Maintained.
74	Ether.	Septic.	Old sinus of abdomen.	Curetted.	Recovery.	
75	Ether.	Septic.	Ulcer of leg.	Thiersch graft.	Recovery.	Established.
76	Ether.	Septic.	Ulcer of leg.	Thiersch graft.	Recovery.	Established.
77	Ether.	Septic.	Necrosis of tibia.	Reamputation.	Recovery.	
78	Ether.	Septic.	Old sinus of thigh.	Multiple incisions.	No improvement.	
79	Ether.	Septic.	Ischio-rectal abscess.	Incision, curetting and packing.	Recovery.	
80	Ether.	Septic.	Gangrene of toe.	Amputation first metatarsal.	Recovery.	Established.
81	Ether.	Septic.	Lacerated wound of finger.	Amputation.	Recovery.	Established.
82	Ether.	Septic.	Lacerated wound of leg; septicæmia; extensive cellulitis.	Incisions; removal of tendons; scrubbing and packing.	Not improv'd.	
83	Ether.	Septic.	Fistula in ano.	Incision, curetting and packing.	Recovery.	
84	Chloroform.	Septic.	Sinus from hernia operation.	Stitch removed.	Recovery.	Established.
85	Ether.	Aseptic.	Recurrent synovitis of knee.	Joint opened.	Recovery.	Maintained.
86	Ether.	Septic.	Necrosis of phalanx.	Excision.	Recovery.	
87	Ether.	Septic.	Ischio-rectal abscess.	Incision, curetting and packing.	Recovery.	
88	Ether.	Septic.	Lacerated wound of leg.	Amputation.	Improvement.	
89	Ether.	Aseptic.	Deform. following Pott's fract	Osteotomy.	Recovery.	Maintained.
90	Ether.	Septic.	Cellulitis of foot.	Incision, curetting and packing.	Recovery.	
91	Ether.	Aseptic.	Adenoma of neck.	Excision.	Recovery.	Maintained.
92	Ether.	Septic.	Hæmorrhoids.	Ligation and excision.	Recovery.	
93	Ether.	Septic.	Hæmorrhoids.	Ligation and excision.	Recovery.	
94	Ether.	Aseptic.	Inguinal hernia.	Bassini operation.	Recovery.	Maintained.
95	Ether.	Aseptic.	Inguinal hernia.	Bassini operation.	Recovery.	Lost.
96	Ether.	Aseptic.	Depressed fracture of skull; epilepsy.	Bone-flap operation; dura opened.	Recovery.	Maintained.
97	Ether.	Aseptic.	Depressed fracture of skull; epilepsy.	Bone-flap operation; dura opened.	Recovery.	Maintained.
98	Ether.	Septic.	Cellulitis of knee.	Incision and packing.	Recovery.	Established.
99	Ether.	Septic.	Ulcer of leg.	Thiersch graft.	Recovery.	Established.
100	Ether.	Septic.	Ulcerating gumma of knee.	Incision, curetting and suture.	Recovery.	Established.
101	Ether.	Septic.	Ischio-rectal abscess.	Incision, curetting and packing.	Recovery.	
102	Ether.	Septic.	Necrosis of phalanx.	Amputation.	Recovery.	Established.
103	Ether.	Aseptic.	Inguinal hernia.	Bassini operation.	Recovery.	Maintained.
104	Ether.	Aseptic.	Ununited fracture of leg.	Resection and wiring.	.....	Lost.
105	Ether.	Septic.	Necrosis of second phalanx.	Excision.	Recovery.	Established.
106	Ether.	Septic.	Cellulitis of shoulder.	Incision, curetting and packing.	Recovery.	
107	Ether.	Aseptic.	Necrosis of thigh.	Amputation.	Recovery.	Maintained.
108	Ether.	Aseptic.	Varicose veins of leg.	Excision.	Recovery.	Lost.
109	Ether.	Septic	Old cellulitis of thigh.	Incision and curetting.	No improvement.	
110	Chloroform.	Septic.	Lumbar abscess.	Incision, curetting and packing.	Recovery.	
111	Ether.	Aseptic.	Varicose veins of leg.	Excision.	Recovery.	Maintained.
112	Ether.	Aseptic.	Fæcal fistula.	Exploratory laparotomy.	Recovery.	Maintained.
113	Ether.	Septic.	Fæcal fistula.	Extra-peritoneal suture.	No improvement.	
114	Ether.	Septic.	Hæmorrhoids.	Ligation and excision.	Recovery.	
115	Ether.	Septic.	Ulcer of leg.	Curetting.	.....	Established.
116	Chloroform.	Septic.	Cellulitis of foot.	Incision and packing.	Recovery.	Established.
117	Ether.	Septic.	Necrosis of tibia; infection of joint.	Removal of dead bone.	No improvement.	

Case No.	Anæsthetic.	Patient's condition.	Disease.	Operation.	Result.	Asepsis.
118	Chloroform.	Septic.	Sinus from stitch.	Removal of suture.	Recovery.	
119	Chloroform.	Septic.	Infected scalp wound.	Curetted and sutured.	Recovery.	Established.
120	Ether.	Aseptic.	Inguinal hernia.	Bassini operation.	Recovery.	Maintained.
121	Ether.	Aseptic.	Inguinal hernia.	Bassini operation.	Recovery.	Lost.
122	Ether.	Septic.	Ulcer of leg.	Thiersch graft.	Recovery.	Established.
123	Chloroform.	Septic.	Abscess of buttock.	Incision, curetting and packing.	Recovery.	
124	Chloroform.	Septic.	Ludwig's angina.	Incision, curetting and packing.	Recovery.	Established.
125	Ether.	Aseptic.	Inguinal hernia.	Bassini operation.	Recovery.	Lost.
126	.....	Septic.	Tubercular abscess.	Injection of iodoform emulsion.		
127	Ether.	Septic.	Fæcal fistula.	Closure and packing.	Not improv'd.	
128	Ether.	Septic.	Necrosis of tibia.	Removal of dead bone.		
129	Ether.	Septic.	Ulcer of leg.	Thiersch graft.	Recovery.	
130	Ether.	Septic.	Ulcer of leg.	Thiersch graft.	Recovery.	Established.
131	Ether.	Aseptic.	Strangulated hernia.	Herniotomy.	Death.	Maintained.
132	Ether.	Aseptic.	Varicose veins of leg.	Excision.	Recovery.	Maintained.
133	Ether.	Aseptic.	Dupuytren's contraction.	Plastic operation.	Recovery.	Maintained.
134	Ether.	Aseptic.	Irritable stump.	Amputation of leg.	Recovery.	Maintained.
135	.....	Aseptic.	Hæmatoma of knee.	Incision and suture.	Recovery.	Maintained.
136	Ether.	Septic.	Cervical abscess.	Incision, curetting and packing.	Recovery.	Established.
137	.....	Aseptic.	Hæmatoma of leg.	Incision and suture.	Recovery.	Maintained.
138	Ether.	Septic.	Gangrene of foot.	Amputation of leg.	Death.	Established.
139	Ether.	Aseptic.	Carcinoma of pylorus.	Gastro-enterostomy.	Death.	Maintained.
140	Ether.	Septic.	Tubercular abscess of neck.	Incision, curetting and packing.		
141	Ether.	.....	Vicious union of leg.	Refracture and plaster.		
142	Ether.	Septic.	Old cellulitis of leg.	Incision, curetting and packing.		
143	Ether.	Septic.	Ischio-rectal abscess.	Incision, curetting and packing.	Recovery.	
144	Ether.	Septic.	Tubercular abscess of neck.	Incision, curetting and packing.	Improvement.	
145	Ether.	.....	Ankylosis of knee.	Rupture of adhesions.	Improvement.	
146	Chloroform.	.....	Obscure hip injury.	Examination under anæsthetic.		
147	Chloroform.	.....	Ankylosis of both knees.	Examination under anæsthetic.		
148	Chloroform.	.....	Obscure injury of hip.	Examination under anæsthetic.		
149	Ether.	.....	Ankylosis of both hips.	Rupture of adhesions.		
150	Ether.	Septic.	Extravasation of urine.	Perineal section.	Recovery.	
151	Chloroform.	Septic.	Infected wound in abdomen.	Incision and packing.	Recovery.	

68 West Forty-sixth Street.

Ichthyol in the Vomiting of Pregnancy.—At a recent meeting of the Academia medica, of Rome (*Dtsch. Med.-Ztg.*, April 9, 1896), Dr. La Torre reported upon three new cases of obstinate vomiting of pregnancy which had been cured by the employment of ichthyol in the form of tampons inserted into the vagina.

THE STUDY OF MATERIA MEDICA AND THERAPEUTICS.

By HENRY M. BRACKEN, M. D.,
PROFESSOR OF MATERIA MEDICA, THERAPEUTICS, AND CLINICAL MEDICINE, UNIVERSITY OF MINNESOTA.

In days gone by it was the custom for medical students to begin their course of study under a preceptor. Practically they served an apprenticeship. Often they were dispensers and became familiar both with the compounding and dispensing of drugs. Their materia medica was learned naturally and easily. They could make a tincture, pill, or plaster. They had a practical knowledge of chemical incompatibles, and were therefore not likely to combine drugs that would make unsightly or unpalatable mixtures or impossible pills. They became familiar with the most satisfactory vehicles for use in prescribing. The study of dosage was not a system of memorizing, but of daily application. Knowing something of the patients for whom medicines were prescribed, they acquired some knowledge of the drug action sought for and secured. The practical physiological action of drugs was thus daily impressed upon them. The experience of the preceptor, demonstrated in his daily prescribing, emphasized the greater importance of certain drugs over others, and at the same time illustrated the grouping together of drugs according to their physiological action, the benefit to be derived from combining two or more drugs having a similar action, or the advantage occasionally resulting from a complete change from one drug to another of the same physiological group in order to avoid establishing a condition known as drug tolerance or the dangers that might arise from the so-called cumulative action of a drug.

Such students on entering a medical school were well prepared to listen intelligently to a course of lectures on therapeutics.

All this is now changed. The medical student of today passes directly to the medical college from his academic *alma mater*. He has not the least idea of pharmaceutical preparations, and knows nothing about dosage. While he may possibly have a theoretical knowledge of the chemical and physiological incompatibility of drugs, he makes little or no practical application of such knowledge. Confusion follows in his book study of materia medica. He thinks the subject a hard one; tries to memorize the facts that the dispenser of former days picked up unconsciously, and fails; grows discouraged and declares the whole thing a bore. Many a practitioner, realizing this condition of things as it bears upon the study of materia medica and therapeutics, learns to belittle the art of prescribing, and pretends to believe that therapeutic knowledge is of such slight importance as to be unworthy of notice. Such influences in the medical profession develop therapeutic nihilists and, by exclusion, surgeons. This is an unfortunate state of affairs, for while it is true that in many cases there is too much drugging done, it is also true that no physician or surgeon can care for his patients as he ought to without the judicious use of drugs. Admitting the truth of the foregoing statements, it is quite

evident that the methods observed at the present time in the teaching of materia medica and therapeutics should be quite different from those followed in days gone by. The course of instruction should consist of two distinct divisions: *First.* Materia medica proper. *Second.* Therapeutics. Brunton defines materia medica proper as "an acquaintance with the remedies in medicine; the places whence they come; the crude substances, plants, or animals which yield them; the methods by which they are ob tained; the means of distinguishing their goodness or purity, or of detecting fraudulent adulterations." This work should not be begun until the student has acquired a fair knowledge of botany, chemistry, and physiology, otherwise the botanical, chemical, and physiological terms constantly in use by the instructor would be quite unintelligible. It should therefore, as a rule, be a second year's study in a four years' course. It should be given chiefly in the laboratory to small sections of students. Every opportunity should be given each student to make himself familiar with pharmaceutical products as well as with crude drugs. Preparations and the methods used in their production should be explained. Chemical incompatibility should be demonstrated. The teaching, in fact, should be pharmaceutical in character rather than therapeutical. It is not advisable that the physiological action of drugs should be greatly elaborated during this year's work, but it should be described simply and intelligibly. Simple statements will produce a more lasting impression than the elaboration of a fact to the point of confusion. A single recognized view is better than half a dozen conflicting statements from which the student is expected to reach a proper conclusion after a more or less difficult process of reasoning.

Bearing in mind the nature of the work required in this first year's study of materia medica, we can arrange our subjects accordingly. We may choose for our drugs an alphabetical, a physiological, or a chemical and biological arrangement. An alphabetical arrangement is the most unsatisfactory of all. If the pharmacopœial order is carried out, it is convenient for reference, and therefore suitable for the practitioner, but not for the student. If the arrangement is in groups—all of the potassium preparations under potassium, etc.—it has certain good features to commend it. In both of these arrangements, however, all semblance of association with other drugs is lost. If both pharmacopœial nomenclature and chemical nomenclature are ignored, as is the case at present in some of the works on materia medica and therapeutics now in use, then the alphabetical arrangement has reached its worst phase. It does not even serve as a good index. To illustrate: If we wished to find *potassium acetate*, we should naturally look under *potassium*, for this is the order of sequence followed both in pharmaceutical and chemical nomenclature, but in the works referred to we must look for *acetate of potassium*. There is also confusion because of the Latin and English titles. We would naturally expect the Latin official title to take precedence over the English title, and would look for the preparations of lead under *plumbum;* of mercury under *hydrargyrum;* of ether under *æther*, etc.; but in some of the works adopting the alphabetical arrangement we are apt to find this order of sequence ignored. Again, we have confusion between the official Latin title and popular titles. For example, we expect to find *spiritus ætheris compositus* grouped with the æther preparations, but in one alphabetically arranged book we find it arranged under H as Hoffman's anodyne. Naturally we now turn to D to find Dover's powder, but it is not there; we must look under opium and ipecacuanha to find it. Again, this alphabetical arrangement confuses us as to place for the alkaloids. For example, we find *codeina* under C. We now turn to M for morphina, but it is not there; it is given *after* opium. Strychnina is given no place; it is simply described in a general way under nux vomica. The foregoing examples illustrate sufficiently the unsatisfactory nature of an alphabetical arrangement

The arrangement of drugs according to physiological action is also a poor one, for it gives as many places to each drug as it may have different physiological actions. Thus, alcohol would be studied under the head of diuretics, diaphoretics, cardiac stimulants, cerebral stimulants, cerebral sedatives, antipyretics, digestants, local irritants, local constringents, etc. No student of materia medica could gain a proper knowledge of alcohol by studying it in this disjointed way. Or, again, certain drugs having a common origin may have a physiological action common to all, and yet each drug of the group may also have a special action. Thus, all of the preparations of mercury have a common physiological action which should always be kept in mind when studying the mercurials; there are also almost as many *special* actions as there are mercurial preparations. Were the arrangement of these preparations based upon their physiological action, we would find drugs belonging to this group scattered throughout the entire book, and would thus lose sight of the action which they have in common. The mercurials should be studied as a group; their general physiological action should be described in connection with this grouping; the individual preparations, with any special action which they may have, should then be taken up. The student would thus have his knowledge of the mercurials thoroughly systematized. We might as well advise the study of the anatomy of the brain from a functional standpoint as the study of materia medica from a physiological standpoint. The chemical and biological arrangement of drugs, while, in a way, open to the same criticisms as the physiological arrangement, seems to be the most natural and the most satisfactory one that can be made for the student beginning the study of materia medica. Such a student should already be familiar with chemistry and with biology, and would thus be prepared to appreciate this grouping of drugs. While pursuing his study of materia medica along these lines he should also be learning something about their physiological action, thus preparing himself for a physiological arrangement of therapeutic agents for his next year's work.

Therapeutics should be studied in two ways. First, from the standpoint of physiological action as applied to clinical use. This is the theory of therapeutics. Second, from the standpoint of clinical application as illuminated

by physiological action. This is the practice of therapeutics. The classification of therapeutic agents according to physiological action is probably the better one for students beginning the study of therapeutics. This work, which represents the theory of therapeutics, should be carried on during the third year of a four-years' course. Anatomy, physiology, chemistry, histology, etc., have all been finished by this time. The study of medicine and of surgery, with their respective specialties, will now be taken up, and the student will begin to appreciate the need of therapeutic knowledge. The grouping of therapeutic agents according to physiological action makes it possible for one to appreciate their relationship to each other, as well as their relative importance. For example, cardiac tonics are grouped together; some are useful, while some are useless or unnecessary; some are suitable for one class of cases, some for another. The student should now be in a position to appreciate the advantages or disadvantages attending the use of each of these therapeutic agents as his attention is drawn to them. Having made himself familiar with materia medica during his previous year's study, his work in therapeutics can be pushed along more rapidly and more satisfactorily than if it was necessary for him at this time to stop and make himself familiar with the drugs under consideration. For example, digitalis, and all the points connected with its study from the materia medica point of view, should already be familiar to the student; it is only necessary, therefore, when describing this drug therapeutically as a cardiac tonic, to dwell upon those facts pertaining to this action and its application. This work in therapeutics can be carried on by means of lectures and recitations.

By the time the medical student has reached his fourth year he is deep in the work of clinical medicine and surgery. Now is the time for work in clinical or practical therapeutics. Instruction should be given by means of lectures and at the bedside or at the clinic. The classification for work is now made from the standpoint of disease, rather than from the standpoint of the physiological action of a therapeutic agent. We may follow such a classification of diseases as that presented in Osler's *Practice of Medicine*, or in any other well-arranged work on practice. It is easy and natural, after one has studied thoroughly the therapeutic agents to be used in the treatment of one of the infectious diseases, to pass on to the treatment of another infectious disease; the points in the treatment that have a common relationship can be readily appreciated. It is natural to associate certain diseases of the respiratory tract, of the alimentary canal, etc., in classes, when we are studying the clinical application of therapeutic agents. Such a line of study tends to make thinking men—men who are not compelled to memorize the pet formulæ (probably somewhat antiquated) of older men. But, you may say, this is the work of the instructors in medicine, in surgery, and in the several specialties. Granted; there is room for all, however. The instructor who has carried his students gradually through materia medica and through the theoretical study of therapeutics is the one best suited as a clinician to illustrate by application the therapeutic facts already presented. He is working with, not against, his clinical associates. It is not necessary to increase to any great extent the present requirements in the regular course of study of materia medica and therapeutics in order to carry out such a plan as I have outlined, but rather to extend the work over a longer period of time than is customary in many medical schools at present. Such a course has the advantage of ever presenting the subject of materia medica and therapeutics in a new light. It lessens to a marked degree the monotony so generally associated with this work.

From the foregoing outline it should be quite evident that a text book written for the student beginning the study of materia medica should not be expected to supply therapeutic knowledge for either the advanced student or for the practitioner; that even the first year's work in therapeutics, as presented in a text-book, is still for students. A text book on therapeutics written for advanced students may be of use to the general practitioner; but in writing any text-book on either of these subjects, the student's needs should be kept foremost in the mind of the author. The custom of writing a work on materia medica and therapeutics that might serve as text-book and reference book from the time a student begins his study of medicine to the close of his professional career should be a thing of the past. This may seem like an unnecessary multiplication of text-books. It is not so. Nothing that facilitates work and makes the subject under consideration easier of comprehension is unnecessary. Books that have a definite object in view are less apt to be cumbersome and expensive than those which try to cover too much ground. "The text-book is useful only as it helps to a knowledge of the subject under consideration; only as it leads one to study, not the book, but the thing. It suggests how the subject with which it deals may be approached. Used with this conception of their nature, text-books give the students their real value. They lead him to more than memorize phrases and terms of expression; they lead him to understand the subject of his study, to understand it from his own point of view. They foster true scholarly virtue, and make one appreciate keenly the difference between real intelligence and borrowed information. When a text-book is once mastered in this spirit, what one reads and observes falls naturally into place and progress becomes easy." *

Hydropathic Hydrophobia.—"A young doctor, commencing practice, had among his first patients an uncommonly unclean infant brought to his office in the arms of a mother whose face showed the same abhorrence of soap. Looking down upon the child for a moment, he solemnly remarked: 'It seems to be suffering from hydropathic hydrophobia.' 'O doctor, is it so bad as that?' cried the mother. 'That's a big sickness for such a mite. Whatever shall I do for the child?' 'Wash its face, madam; the disease will go off with the dirt.' 'Wash its face—wash its face, indeed!' exclaimed the matron, losing her temper. 'What next, I'd like to know?' 'Wash your own, madam—wash your own.'"—*British and Colonial Druggist.*

---

* The Value of Text-books. Woodbridge, *Minnesota Magazine*, March, 1896.

THIOSINAMINE:

A TREATMENT FOR "INOPERABLE" TUMORS AND CICATRICIAL CONTRACTURES.

By SINCLAIR TOUSEY, A. M., M. D.,
ASSISTANT SURGEON, ROOSEVELT HOSPITAL, OUT-PATIENT DEPARTMENT; INSTRUCTOR IN CLINICAL SURGERY, NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL; SURGEON IN CHIEF, ST. BARTHOLOMEW'S CLINIC.

I HAVE been experimenting with thiosinamine and studying the literature in regard to it for over a year and a half, and I think I have proved that it possesses positive curative properties in causing the resolution of benign and malignant tumors and the absorption of cicatricial tissue.

So far as reported cases go, mine are the first in which it has been employed in the treatment of keloid and other neoplasms; and, though the number of my cases has been small, the results have been positive. I believe that with increasing opportunity even greater action will be demonstrated than is now apparent.

In addition to a number in which only one or two injections were made, my own cases were three of keloid, two of recurrent and "inoperable" carcinoma, and two of lupus.

It will be fairer to earlier investigators, almost exclusively as to its effect on lupus to give the results of their observations, with corroborative or other statements of my own. Then I shall call attention to the lessons to be learned from my own cases.

The substance itself is not at all a new one to chemists. It is amply described in the edition of Fownes's *Chemistry* which I studied ten years ago. Its first use in medicine was reported by von Hebra before the Second International Congress of Dermatologists, Vienna, 1892. He had experimented with it in the hope of finding in it a cure for lupus. A number of his cases were treated in a sanitarium, where they were constantly under observation, so that his description of its physiological effects is more complete than those of Van Hoorn, Keitel, Richter, Sedziak, and myself. If I fail to confirm some of his observations it may be because my opportunities for study have been more limited.

Hebra's description of the drug is excellent:

It is allylsulphocarbamide, and is made by mixing two parts of oil of (black) mustard seed, one part of absolute alcohol, and seven parts of aqua ammoniæ of the specific gravity of 0·960, warming to 104° F., and after a few hours evaporating over a water bath. The odors of mustard and ammonia disappear, and on cooling there are deposited crystals of allylsulphocarbamide, or thiosinamine The chemical class to which this belongs is shown as follows:

Urea is $CO<^{NH_2}_{NH_2}$ Thiosinamine is $CS<^{NHC_3H_5}_{NH_2}$

Thus the oxygen has been replaced by sulphur in the carboxyl, and one atom of hydrogen by the allyl radicle in the amine group.

It is soluble in water, alcohol, and ether, but, like other mustard derivatives, decomposes in aqueous solution. It occurs in small acicular crystals and has a bitter taste and a garlicky odor.

The method in which thiosinamine was used by Hebra was the hypodermic injection of a fifteen-per-cent. alcoholic solution into the muscular tissue between the shoulder blades. A fine needle was used, and the injection was made slowly and deeply. The beginning dose was from half to three quarters of a grain, and this was injected twice a week. In lupus cases the dose was increased in the third or fourth week to half or the whole of a hypodermic syringeful of a fifteen per-cent. solution, equivalent to from a grain and a half to three grains of thiosinamine twice a week. These doses were as well borne as so much distilled water, but he says they always produced a visible curative effect. In a few cases he went as high as one and a half or two syringefuls with no bad effect. Keitel and Richter used a fifteen-per-cent. alcoholic solution. I have used a ten-per-cent. alcoholic solution, and Van Hoorn, on the recommendation of Professor Duclaux, of Paris, has used a ten-per-cent. solution in equal parts of water and glycerin. This he found just as active and not nearly so painful as the alcoholic solution. I shall try this in future cases. This solution has the further advantage of being available for use in agar-agar cultures and the like, where the presence of alcohol would interfere.

Hebra, as has been said, rarely reached three grains; I myself have never exceeded a grain and a half; but the other observers quoted used four grains and a half as a regular full dose, beginning, of course, with smaller ones. It appears to me that we should not try to give the largest doses that will be tolerated, but rather the smallest that will produce the therapeutic effect.

In Keitel's case and in my own cases the injections were into the muscles of the arm and forearm. In his case there was an effect which will be described; in mine there were no ill effects. The others all made the injections into the muscles of the back.

If an alcoholic solution is used there is sharp pain lasting for less than a minute. This may be somewhat diminished by pressure to diffuse the solution through the tissues.

One very soon discovers that the syringe has to be washed out with water after the use of an alcoholic solution, otherwise the leather washers on the piston become dried and loose. Hebra mentions a syringe made by Gutentag, of Paris, with a rubber piston which can be compressed and tightened by a screw. It would be ideal for this purpose.

I found, as Hebra did, that it was desirable to discontinue treatment for ten days every six weeks or two months. The others do not seem to have done so.

Bacteriological studies of thiosinamine have been reported only by Hebra and Van Hoorn. Hebra at first found that rabbits were apparently made proof against anthrax, but in a second series of experiments all the rabbits died. Van Hoorn experimented in the Hygienic Institute in Amsterdam, with the assistance of Professor Forster. He found that the presence of a small percentage of thiosinamine in a culture medium rendered ineffectual an inoculation with certain bacteria. The addition of a few drops of a ten-per-cent. solution retarded or rendered im-

possible the further growth of a culture; but even flooding it with thiosinamine for twenty-four hours did not kill any bacteria. I have made no personal observations upon this subject.

The physiological effects upon animals have been studied by Hebra alone. He injected three grains daily for a month into a dog weighing twenty-two pounds. Three grains, it will be remembered, is the largest dose he ever used for a grown man. The dog remained perfectly normal, but became ravenous, and gained nine pounds in weight. He further injected into curarized animals in the laboratory of Professor von Basch doses ten or twenty times greater in proportion to weight than in man. The only effect was a slight lowering of the pulse curve, and this was evidently due to the alcohol in which the drug was dissolved.

Its physiological effect in man is in a general way that of a very mild tonic. If the subject is perfectly sound, there are no symptoms at all produced by the injections, and if there is a lesion present the reaction which may occur is local, and is not accompanied by any general symptoms. Especially, there is never any febrile movement. There is in all cases a tonic effect with an increase in weight. Thus far my own observations and those of all the others are in accord. Hebra states that absorption is very rapid, since his patients noticed a garlicky taste in the mouth within a few minutes. The same author has noted an extraordinary diuresis, the increase in the daily amount of urine being two hundred or five hundred cubic centimetres. In no case were there renal symptoms, or the presence of albumin or other pathological product in the urine. This diuresis ceases after a number of injections. He thinks it is a therapeutic action and ceases after the abnormal fluids have been eliminated. Van Hoorn and Keitel, who both used large doses, noted after several weeks' treatment the onset of nausea, headache, and lassitude. Hebra used smaller doses and I still smaller ones, and we have not had such an experience.

Richter has studied its effect on the blood in a number of cases of lupus vulgaris, lupus erythematosus, ulcer of the leg, and cicatricial stricture of the urethra. He noted the number of white and red blood-cells, the amount of hæmoglobin, and the changes in the morphology of the histological elements of the blood. Blood examinations were made just before the injection, four hours later, and again twenty-four hours afterward. In some cases examinations were made half an hour afterward, and in eight of these cases a change in the number of leucocytes had already taken place. The blood was always obtained by pricking the finger tip and without pressure, and always at the same hour of the day. There was uniformly an immediate decrease in the number of leucocytes to one third of the normal number—viz., from about fourteen thousand down to four thousand to the cubic millimetre. But at the end of four hours the number of leucocytes had increased to normal or beyond, and in some cases there was well-marked leucocytosis which persisted for forty-eight hours. There were no uniform changes in the number of red cells. The amount of hæmoglobin was regularly increased. There was no special effect upon the number of eosinophile cells, but there was a uniform increase in the number of multinuclear leucocytes or leucocytes with polymorphous nuclei.

Richter states that in its action on the blood thiosinamine belongs to the same class of substances as hemialbumose, peptone, pepsin, nuclein, pyocyanin, tuberculin, curare, urea, uric acid, and sodium urate. Löwit has shown that the intravenous injection of these substances causes an immediate leucocytolysis followed by leucocytosis. He thinks that the first effect is the cause of the second. Since it calls into the circulation new blood elements from the blood-preparing organs, it must necessarily stimulate the activity of those organs. Of course, the real cause of this leucocytolysis is still unexplained.

There has been only one accident reported from the subcutaneous use of thiosinamine. It consisted in the production of temporary cutaneous anæsthesia, and was observed by Keitel. The patient was a robust youth with recurrent psoriasis of a papular type, and thiosinamine was used with a view to causing absorption. The injections were made at various points, and the last one into the muscles of the extensor aspect of the forearm. This was followed very shortly by complete anæsthesia of the skin supplied by the cutaneous branch of the musculospiral nerve. It could not be stated positively that the nerve had been wounded by the needle, which I think probable, and Keitel thinks the effect due to the action of the drug itself upon the nerve. Temporary motor or sensory paralysis is not altogether unknown as an effect of the hypodermic method of medication. Thus, paralysis of entire groups of muscles after hypodermics of ether have been reported by Remak, Mendel, and Brieger. Purely cutaneous anæsthesia is not nearly so common, but two cases have been reported by Falkenheimer and Möbius. The former's was the result of a hypodermic of ether and the latter's of one of a solution of antipyrine.

In all these cases the disturbance of function was only temporary. This would seem to be a slight objection to any hypodermic medication, and not particularly to the use of thiosinamine. In one of my own cases twenty-seven hypodermics of thiosinamine were administered in the left biceps at approximately the same spot without any unfavorable effect.

Its effect upon pathological conditions is that of a powerful absorptive, acting probably by increasing the activity of the lymphatic system. This effect is seen in the absorption of serous exudations, accompanied, as before stated, by marked diuresis. It is also visible in its effect upon lupus, corneal opacities, cicatrices, glandular swellings, and neoplasms. Hebra used it in a number of tuberculous patients who had had no recent pulmonary symptoms, and observed a return of fever after the injections. In such cases the fever is perhaps due to the absorption of encapsulated pus. In one case of his with very severe night sweats there was repeatedly a marked amelioration following the injections. This was verified by control experiments. This same absorptive effect is so active locally that in some classes of cases a latent process may be fanned into an active one. This is especially the case

in its use for clearing up opacities of the cornea; if there is the slightest inflammatory condition present this will be very much aggravated, and treatment will have to be suspended. In some cases this local inflammatory reaction is of benefit. Cases have been reported in which an apparently cured osteomyelitis has started up again after the injections—a new abscess has formed, a sinus has opened, and an *old* sequestrum has been extruded. This has been followed by definitive healing, and the entire process could only be regarded as having been a beneficent one.

Its use in the treatment of lupus is of historical interest, since that was its first therapeutic application. The results obtained by Hebra, Richter, Van Hoorn, and myself are somewhat at variance. Hebra and Van Hoorn observed in practically every case a local reaction which they describe as beginning two or three hours after the injection. The diseased part becomes red and swollen, sometimes so much so as to cause fissures in the surface. There is no vesication and there is little if any serous exudation. This reaction remains undiminished for five or six hours, but at the end of twenty-four hours has entirely disappeared. Marked desquamation sometimes follows. There is never a general reaction, and especially there is no fever. There is a sensation of heat and tension in the affected part. These two authors report this reaction to have occurred in practically every lupus case, and to have been repeated without material increase of the dose after each injection. My own lupus cases have been in dispensary practice, and the patients have not been seen until forty-eight hours after the injection. So far as the patients' statements can be counted, my cases have not shown a local reaction. Richter had a comparatively large number of cases of lupus (eleven), and in only two was there any reaction, and then only with the first two or three injections. His cases, as we have seen, were under constant observation, and the doses used were large.

As to the curative action upon lupus, Van Hoorn and Hebra observed a very great effect indeed wherever the superficial area of disease was great. Ulcerations healed, and the thickened and nodular edges flattened out. No case of complete cure is reported, and where the area involved was quite small—lupus of the cheek of the size of a dime—it was hardly influenced at all. Richter has seldom seen any effect at all upon lupus. In my own cases no "reaction" has been noted, but I have uniformly seen a diminished vascularity and a softening of the edges with healing of the ulcer. I agree with the other authors quoted that local treatment is a better means of handling lupus than the use of thiosinamine.

Its therapeutic application in clearing up corneal opacities has been attended with almost perfect success in the hands of all the investigators. Hebra had a patient who, before the injections, could hardly avoid collisions with people on the street, and afterward the acuteness of vision had so increased as to enable him to tell the direction of the wind by the weather vane on the high Rathhausthurm (city hall tower) in Vienna. He and Richter report a number of such cases, and give the formulæ for vision before and after treatment, demonstrating a remarkable increase. This is to my mind of the greatest possible importance, for we can promise almost all these patients an astonishing improvement in vision. The cases for which it is unsuitable are those in which a vestige of inflammation is still present and might be started up into fresh phlyctenulæ.

In the treatment of cicatricial contractures thiosinamine acts by causing absorption of the fibrous tissue, whether located in the skin or in deeper parts—such as tendons and ligaments; and all the authors cited report complete cures of such cases. Among these are ectropion following lupus of the cheek, partial ankylosis of the knee from lupus, and talipes equinus following an injury (burn) of the leg. One case of ectropion was so marked that the eye could not possibly be closed, the tarsal cartilage was so rarefied by pressure and traction as to be scarcely perceptible, and even the corner of the mouth was drawn up toward the eyelid. This patient was restored to a normal condition, and the skin of the cheek became soft and freely movable on the subjacent tissues. In another case of Hebra's there was such contracture following lupus of the palm that the finger nails grew into the flesh. Complete extension was possible after about twenty-five injections, no other treatment having been employed. It was this wonderful absorptive power over cicatricial tissue which suggested to my mind its use in keloid and malignant neoplasms, in which I believe I am the first investigator.

In the treatment of simple ulcers and of stricture of the urethra, Richter's half-dozen cases, with an average of eight injections, gave negative results; but I should not regard this as final. In the case of stricture of the urethra or rectum, I believe this might be a very valuable adjunct to local treatment.

Its action upon chronically enlarged glands has been observed by Hebra, and it is to cause a very rapid absorption. In syphilitic cases, on the other hand, absorption was not effected; and he believes that this may in some cases be of diagnostic value. He and the other authors cited have not used it in the treatment of glandular swellings secondary to epithelioma or carcinoma, some of which are described below from my own experience. It has been used with success for uterine myomata.

It has been used with negative results in eczema, psoriasis, and lupus erythematosus.

A case of mine, which I wish to describe in detail, was one of keloid. A study of the action of the drug as detailed above led me to believe it the ideal non-operative treatment for these neoplasms.

The patient, Patrick M., was a mechanic, thirty-two years old. In September, 1893, his left arm was burned from shoulder to fingers. An area about four inches and a half in diameter immediately above the elbow healed by granulation, the rest being more superficial. About four months after the accident the cicatrix began to itch and burn, and very soon a hard, prominent mass had formed in the scar. When he was admitted to St. Bartholmew's Clinic, July 7, 1894, he presented a typical keloid, consisting of two areas, each of the size of a silver dollar and projecting three quarters of an inch above the surface. These were on the flexor aspect of the arm just above the bend of the elbow. The treatment consisted in hypodermic injections into the left biceps

twice a week. It should be mentioned that he applied for treatment because of impaired motion at the elbow. The beginning dose was two thirds of a grain of thiosinamine, in ten-per-cent. solution in absolute alcohol, and the highest dose used was a grain and a half. These injections produced no special effect except on the neoplasm. After one or two treatments this became very much paler, and after twelve injections one portion had lost its thickening and induration. This part was then visible as apparently normal skin, but a little paler than the rest. The other area gradually changed to the appearance of normal skin. The cure was complete after twenty-seven injections had been made. Complete use of the arm was restored, and there was no thickening or adhesion of the skin, though the cicatrices were, of course, still recognizable.

Another patient, J. E., was referred to me by Dr. Frank Hartley for treatment by this method. He had been operated upon by another surgeon for carcinoma of the inferior maxilla, and there was an "inoperable" recurrence involving the larynx, the pharynx, and the glands of the neck. Ulceration had taken place. The effect of a few injections was very apparent indeed. The induration became somewhat less, and the foul sloughing surface became cleaner. Unfortunately, he learned at this time of the existence of a faith curer and abandoned treatment. He died some three months later.

There are reserved for another paper the description of additional cases and the consideration of the selection of cases for this treatment in preference to local means.

To recapitulate: We have in thiosinamine a drug producing, when given hypodermically, no general symptoms, and even when long continued no harmful effects. It acts specifically upon certain abnormal tissues to cause their absorption or conversion into normal tissues. It is of doubtful efficacy in lupus and a variety of skin diseases. But it is of the greatest possible value in the removal of cicatricial contractures following lupus or any other cause of loss of substance. The frightful contractures from burns of the neck would yield to its action, as cases of ectropion and corneal opacity do. My own cases have shown its curative effect upon keloid, and its palliative and probably curative effect on malignant tumors.

Bibliography.

A. On Thiosinamine.

von Hebra, H. H. *Internat. klin. Rundschau*, 1892, vi, 1497 and 1583.

von Hebra. *Wien. med. Bl.*, 1892, xv, 605.

von Hebra. *Monatshefte f. prakt. Dermatol.*, 1892, xv, 337 and 432.

Richter. *Wien. med. Woch.*, 1893, xviii, 1212 and 1257.

Van Hoorn. *Monatsh. f. prakt. Dermat.*, 1894, xviii, 605.

Sedziak. *Pam. Towarz. Lek. Warsaw*, 1893, lxxxiv, 785.

Keitel. *Charité Annalen*, Berlin, 1891 and 1892, xviii, 639.

B. On Collateral Topics.

Löwit. *Physiol. des Blutes und der Lymph*, Jena, 1892, p. 24.

Remak. *Berl. klin. Woch.*, 1885, No. 5.

Falkenheimer. *Mittheilungen aus der med. Klinik zu Königsberg*, 1888.

Möbius. Schmidt's *Jahrbucher*, 1889.

29 West Thirty-eighth Street.

CARBUNCLE.

By J. O'CONOR, M. A., M. D., B. Ch., Trinity College, Dublin, senior medical officer, British Hospital, Buenos Aires.

At this stage in the progress of surgical science one occasionally is struck by the fact that there are as yet some medical men who prefer to do or say anything rather than use a knife freely.

I confess I was deeply interested in a memorandum in the *British Medical Journal* for January 25th, written by Mr. Timothy Richardson, *re* the local treatment of carbuncle. According to this gentleman, "moist cane sugar (foots), spread over a hot linseed poultice," is guaranteed to kill a carbuncle. While I do not doubt his good results, or his belief in his own method, yet the application of such nostrums appears to me directly opposed to scientific treatment, and the appearance of such doctrines in a journal that serves as an up-to-date tutor for practitioners involves such a considerable risk to young men entering practice that I have no hesitation in attempting to draw their minds from such folklore to a much more scientific and trustworthy method—viz., the removal of carbuncles by excision.

During the past three years it has fallen to my lot to treat twelve cases of carbuncle—six on the nape of the neck, two on the buttock, two on the back, one on the perinæum, and one on the face; in each instance the treatment adopted was excision, supplemented in four cases by erasion.

The operation is carried out in the following manner:

1. The patient having been placed under ether anæsthesia, a deep incision is made around the whole circumference of the carbuncle, at least half an inch outside the infected area. Luckily, carbuncles, as a rule, do not occupy parts where there are any large blood-vessels, therefore there can be no excuse for stinting the depth of this incision.

2. With the handle of a scalpel or a periosteal elevator, the carbuncular mass is undermined, elevated, and removed in the same manner as a tumor of the breast.

3. Sometimes it happens that the disease has extended too deep and can not be isolated from the surrounding structures. In such a case I always remove all I can with the knife; then strong scissors are brought into action, and lastly the business is finished with a sharp Volkmann's spoon. Not a trace of the disease should be left.

4. In order to contend with any microscopical particles that may have escaped this process of eradication, I swab the whole surface with a solution of zinc chloride, forty grains to the ounce. Of course, this is only used in cases that do not admit of a clean removal.

5. A large circular wound is generally left; this is painted with the following solution: Carbolic acid, one part; alcohol, one part; methyl violet, one part; water, ten parts. It is then dusted with iodoform, packed with iodoform gauze, and bandaged.

6. When the granulating wound comes level with the surrounding skin, Thiersch's grafts are applied, which considerably hasten the cure.

Needless to say, this operation is not by any means a bloodless one, but with a steady assistant, armed with a dozen pressure forceps, there is no need of alarm. Any vessels that merit it are tied; the general oozing soon ceases with the pressure of a sponge soaked in hot water.

Out of the twelve cases, in eight the carbuncle was cleanly excised; the remaining four required the scissors, spoon, etc. In not a single instance did the disease recur in the wound; constitutional symptoms, in some cases severe, vanished in twenty-four hours. In fact, it is hard to realize that a patient so deep in the throes of septicæmia can be restored to his normal state in such a short space of time. No other method that I have ever tried or heard of equals complete excision in this respect. To show this I shall mention one case.

A ship's officer, aged thirty-five years, entered the British Hospital suffering from a large carbuncle situated below the spine of the left scapula. On the evening of admission his temperature was 104°; tongue furred and dry; pulse, 110; cold, clammy sweats; anorexia, with an anxious face, flying all the signals of surgical distress. On the following morning, as his general condition was worse, notwithstanding the frequent application of warm boric-acid fomentations through the night, he was placed under the influence of chloroform, and an incision made around the whole circumference of the carbuncle, which was over four inches in diameter. The whole mass was lifted up from the connective tissue and removed without opening the diseased portion. The following evening the temperature was normal. He felt he wanted something to eat. The temperature never again exceeded 99°. He was able to partake of full diet on the third day, and was taking exercise in the garden on the fourth.

My experience in the other cases has been identical. There was no trace of sugar found in any of the patients' urine; consequently, I can not say how a diabetic patient would bear the operation. It practically means for him, "Is the cure worse than the disease?" Personally, I doubt it.

Having obtained such remarkable results by excision, I reluctantly feel impelled to question the dictum of so good an authority as Mr. Jonathan Hutchinson, Jr., in Treves's *System of Surgery*, page 713. This gentleman, writing on the treatment of carbuncle, states: "An ancient plan of treatment of carbuncle has, however, been lately revived, consisting in cutting with scissors and scraping away all the slough, in the belief that this shortens the healing process. Undoubtedly, some time and perhaps considerable pain are occasionally saved by this plan; but, on the other hand, the risk of opening up veins and causing pyæmia appears to be distinctly increased, and many surgeons have on this account abandoned it." Well, this gentleman's opinion and mine are far from coinciding. I should explain the occurrence of pyæmia as due to half-hearted operations where the disease was not thoroughly cleared away, or to operations undertaken too late, when the pyæmic virus had already entered the blood. So far, I have not heard of pyæmia following Barker's operation in psoas abscess, scraping away suppurating inguinal glands, or the opening up and scraping of large abscesses on the thigh, where the process is somewhat identical.

My apology for this criticism is: First, that I do not think there is any scientific foundation for the remarks just quoted as to the possible dangers; secondly, I am a strong believer in the doctrine that, in every instance in surgery where there is grave constitutional depression, prompt measures ought to be taken, and, if possible, a "clean sweep" made, not only of the micro-organisms, but of their camp. To dillydally, in the hope that painting with iodine, injecting limited quantities of carbolic acid, or applying dirty linseed meal covered with "foots," will bring about such a change that the phagocytes may eventually conquer, is a species of surgery that must be attended with disaster.

As Mr. Hutchinson does not mention complete excision in the treatment of carbuncle, my remarks as to his theories only refer to operations where the scissors and spoon are used as supplementary to the knife.

NOTES ON

HYDROCELE AND SEROUS CYSTS IN THE INGUINO-SCROTAL REGION,

WITH SPECIAL REFERENCE TO MODERN TREATMENT.*

By THOMAS H. MANLEY, M. D.

To enter into an analysis of all the above-named pathological conditions would entail the preparation of a contribution far beyond the scope of the present undertaking, in which it is intended rather to call attention to the distinguishing features of the gross characters of inguino-scrotal enlargements than to consider any at all in detail, other than superficially, except the most common—viz., the first embraced in the above-given classification.

Hydrocele is the most common type of scrotal enlargement if we eliminate hernia.

In Curling's valuable work on the testes we find the fullest account of this infirmity. But late advances in morphological and pathological studies have rendered his classification of hydrocele somewhat obsolete, in which he includes the spermatic, encysted tumors of the testis, the epididymis, and the cord. This grouping together under one head of so many pathological conditions, dependent on widely different causes, strikes one as apt to lead to confusion in diagnosis and inexactness and uncertainty in treatment.

The general character which all cystic accumulations in the scrotum present is, that their contents are liquid or semiliquid.

It is difficult to determine the relative frequency of this infirmity—how many are, or have been, affected by it after reaching adult years. This is evident when we understand that very many who have suffered from it in a moderate degree may have been spontaneously relieved through the unaided powers of Nature. Moreover, the testis not being an organ indispensable to life, an effusion into its enveloping serous bag is not prone to lead to any serious constitutional

* Read before the Section in General Surgery of the New York Academy of Medicine, April 13, 1896.

symptoms, and hence many may carry one unobserved without any serious inconvenience for years. Except for the dragging sensation on the spermatic cord, little inconvenience is borne by many who have it. In a considerable number, however, the misery it provokes is quite unbearable, particularly those in whom sympathetic irritation of the urinary organs is provoked.

The predisposing causes of the condition are certainly extremely obscure. Habits, social caste, constitutional state, venereal abuse, or specific disease seem to exercise no special influence. It has generally been observed that the disease prevails more frequently in warm climates, and appears in some manner to depend on malarial influence. British practitioners have found it more prevalent in India than in their own cool, damp native isles in the North Atlantic. In America, however, there are no statistics extant which show that it is any more prevalent in the hot cotton States of the South than in the colder North.

It appears with greater frequency on the right side, as varicocele does on the left. In seventeen of twenty-eight of my own cases it was on the right side. In a consideration of the ætiology, the question arises, Is this transudation through the serous membrane dependent *de novo* on changes within the tunica vaginalis, in blood-vessels, or is it secondary or symptomatic of disease in a dependent organ?

Panas, in his work on the male genito-urinary organs, stated in emphatic terms his belief that these effusions were symptomatic of such affections as chronic inflammation of the epididymis, congestion, degeneration, or fibrosis of the neck of the bladder, or the prostata, in those who had passed forty-five years. But, as Lucas-Championnière, Lannelongue, and Marmion have pointed out, this theory is lacking anatomical demonstration, and, moreover, the enlargement is sometimes found in the robust, of early life, of full sexual power.

As to the age at which hydrocele is most common, authorities are not in full accord. According to Kocher, Socin, Baun, and Langenbeck, it is most general at middle life. Dujat found it most frequently on the left side and Curling on the right, while Kocher found it about equally on both sides.

Velpeau, in 60 cases, found it between the ages of fifteen and twenty years in 13, twenty and thirty years in 13, thirty and forty years in 11, forty and fifty years in 16, fifty and sixty years in 10, sixty and seventy years in 6, seventy and eighty years in 1.

In Dr. Geoffrey Hall's 19 cases in India, in 10 the age was under forty years; in 9 the age was over forty years.

Dujat, at the Calcutta Hospital, in 1,000 cases of hydrocele treated there in two years—1836–'38—found in those between eighteen and twenty years, 41 cases; between twenty-one and twenty-five years, 173 cases; between twenty-six and thirty-five years, 473 cases; between thirty-six and forty-five years, 254 cases; between forty-six and fifty-nine years, 43 cases.

This table would seem to prove by all odds the greater frequency of hydrocele under forty years in India. Maturity is reached at an earlier age in warm countries, where degenerative changes set in correspondingly early; hence, these statistics can not apply to those living in temperate climates.

Kocher, in his surgical clinic at Berne, in the treatment of 5,969 surgical cases had but 44 cases of hydrocele, a proportion of ·073 in 100. His conclusions on the age limit most observers will agree to if he includes cysts—viz., that it is most common in nursing infants, rare in childhood, and again attains its maximum after middle life.

Terrillon, in the main, agreed with the above-given views of the Swiss surgeon.

In elderly men hydrocele sometimes attains an enormous size, and, as a rule, in these we find in association with it coincident marked atrophic and structural changes. The scrotum is thickened and indurated, the tunica vaginalis may be calcareous and cartilaginous in patches, and all the enveloping structures may possess a lowered vitality.

The Treatment of Hydrocele and Cystic Disease of the Spermatic Cord and Testis.—With an approximate knowledge of the pathological changes in operation in the production of a lesion or diseased condition, we are the better enabled to institute a rational therapy. Having been once assured that the causes in operation are local and limited, and are quite independent of the constitution as a whole, our remedial measures are restricted to only the area involved.

It is only necessary in all cases of local infirmities that we institute a searching investigation in every instance, and positively assure ourselves that no constitutional disturbance is in operation, either latent or acute, before we proceed to lay down any line of radical treatment addressed exclusively to an isolated region. To recommend radical surgical intervention for any condition whatever which may be reached and remedied through the system is a cruel blunder, and its results, to say the least, are little less than a mutilation. With a sound knowledge of the pathology and symptomatology of the conditions under consideration such an error can scarcely occur.

Serocystic diseases of the scrotum and funo-testicular tract are evidently phases of a disordered condition dependent chiefly on local degeneration of a senile character. It has been well said that "years do not always make age"; and so it is with local senility, or those conditions of a degenerative order which manifest a tendency to disease in the genital as well as other organs. We sometimes witness them in those young in years; but with a knowledge of the fundamental changes in operation, we know that the same treatment is practically appropriate for all, quite regardless of age.

Simple effusions into the tunica vaginalis of recent acute development may be witnessed in connection with various constitutional maladies, as in rheumatism and others, when any of the fibro-serous envelopes may become the seat of inflammation, also in general anasarca and in tubercular, syphilitic, or cancerous testis. Some of these types, when not of an aggravated character, may yield to constitutional measures.

In the metastatic inflammation of epidemic parotiditis, traumatic or infectious orchitis or periorchitis, effusions within the vaginal tunic may occur, to spontaneously disappear with the disappearance of the pathological condition which provoked them.

Chronic hydrocele has been known to vanish after a severe contusion of the scrotum, there having probably been a rupture of the vaginal coat and escape of the fluid into the connective tissues. Brodie mentions such a case (*Lond. Med. Gaz.*, vol. xiii, p. 90). Sir Astley Cooper met with instances of violence to the scrotum in this disease, but in all his cases it had simply transformed a hydrocele into a hæmatocele (*On the Testes*, p. 90).

The object in view in the modern treatment of hydrocele has been and is to bring about a complete cure, it being assumed in all instances that in order to secure this the cavity of the tunica vaginalis must be destroyed. We have evidence, however, that in many cases, after simple tapping, a cure may follow, though the cavity remain. Such instances have been recorded by Ramsden, Wadd, Cooper, Brodie, and many more modern observers. From this it would seem that in many the relief of tension, with the consequent effects on the circulation and secreting apparatus, was quite enough to re-establish a healthy action and suppress the local dropsy without impairing the integrity of the serous envelope.

Bearing on this point, Brodie sagely remarked: "A great degree of inflammation in the vaginal coat will not always insure a patient's cure. The palliative method may be practised at all times of the patient's life and in almost any state of the general health." In my own experience with injections after evacuation, fully a third relapsed. Besides, independently of occasional failure to effect a cure, radical methods lie under interdiction and prohibition under various circumstances, as when we are without proper means to guard against infection or provide the necessary attendance on the patient, or when by reason of age, organic disease, or various local complications, division of the tissues is not advisable. In the early part of the present century the trocar was preferred to the lancet in tapping the scrotum, because, as Pott stated, with this the sac could be entirely drained and there was less danger of hæmatocele following. Cooper formulated with great care certain definite rules for the use of the cannula, important to observe in their time, but they have little application now.

In cases that are not suitable for radical operations, or in individuals who prefer not to submit to them, Keats's practice of the local application of chloride of ammonium and vinegar may be tried. Brodie gave it his sanction as quite invariably successful. Baron Graefe later highly commended the solution, when it was blended with vinegar of squills, in adult hydrocele (Brodie *On the Testes*, p. 178).

Acupuncture.—Several years ago Mr. Leurs, of London, introduced acupuncture as a means for the radical cure of hydrocele. He reported fifty successes, and said that most cases yielded in those days. Mr. Travers gave this plan an extensive trial. In some he had success attend his efforts, while in others he failed. In recent moderate accumulations it strikes me as an admirable procedure. With proper sterilization of the scrotum and needle no harm can follow. It would be well, though, to employ a spear-pointed needle, taking care to avoid the large veins and the testis, introducing the needle in a slanting direction, in order that the fluid may drain into the connective tissue.

Tapping with the trocar and cannula—the mode of treatment commonly in vogue until anæsthetics and antiseptics gave operative surgery such a tremendous impetus—though the best means available in its time, has no place in the modern treatment of scrotal effusions; yet, strange to say, some surgeons still tenaciously persist in employing it.

It certainly is a surgical procedure awkward, slovenly, and inexact in its effects. In not a few the trocar may be sent plump into the testis. In all cases there is danger of wounding this organ, producing concealed hæmorrhage or infection. In various types of simple or encysted sarcocele with attendant effusion, the testis can not escape being pierced by the point of the trocar. In an old, incarcerated hernia with chronic hydrocele, its investments are so hypertrophied as to render a mistaken diagnosis possible. To transfix the intestine under these circumstances would be a serious matter. But with the cannula, it may be said, we have an instrument permitting a dual action, for we may drain off the fluid and inject the sac without disturbing the tube. In former times this certainly was an advantage, but counts for little now.

The trocar has been known to slip as the fluid drains off, when the retracting walls collapse, in consequence of which mishap many an unfortunate has had the charge of spirits, phenic acid, or whatever the irritating injection might be, sent into the cellular tissue instead of the cavity of the vaginal tunic.

The artificial establishment of acute adhesive inflammation by means of chemical mixtures so introduced is a most unsurgical procedure. In many hydroceles we may find masses of myxomatous or colloid material adhering to the tunica albuginea or parietal surface; or the hydrocele may have several locules unopened by the trocar, so that the injection can come in contact with only limited areas of the serous surface.

Besides, the injections of caustic astringents sent into the tunica vaginalis are not free from the dangers of constitutional absorption and poisoning. In many the shock is considerable, and in all the subsequent pain is so great as to lay the patient up and require the use of opiates. Should the processus vaginalis remain open, the danger of peritonitis must be great.

Sometimes the orchitis which follows is very severe, and atrophy of the organ has been known to follow. The practice of former surgery in these cases was indeed harsh, as I well remember from my student days. After the fluid was drained away and the undiluted Churchill's tincture of iodine was injected, the operator, doubtful that enough irritation had been provoked, would seize the scrotum in the hollow of the hand and several times severely squeeze the testis.

Coates quite lately has reported a case presenting the

most alarming symptoms after iodine injection (*University Med. Mag.*, 1893, p. 73). Two drachms of iodine tincture were injected. Almost immediate collapse with unconsciousness followed, and for a time it was thought the patient was dead. But he recovered, and yet, after all these violent constitutional disturbances from absorption and irritation, the hydrocele was not cured. Edward Gibbon, the historian, lost his life through the repeated tapping of a mammoth hydrocele.

Enough of similar cases are reported in current surgical literature to warrant the assumption that strong irritating solutions for intravaginal injection of hydrocele are by no means always either safe or radical as a cure.

Treatment of Hydrocele by More Modern Methods.—The treatment of these adventitious or neoplastic formations of a fluid or semifluid character found in the external genital elements resolves itself mainly into two things—viz., noninterference and interference, or palliative and radical measures. For example, should one only become aware of the presence of a fluid accumulation along the course of the cord or in the scrotum, giving rise to no discomfort, it might be a question whether it would be proper to urge active treatment of it. If, however, the individual was soon obliged to undergo a physical examination, and this blemish might constitute a cause for rejection, there would be no excuse for hesitating in deciding what line to adopt, though, with one far advanced in years or in broken health from organic disease, unless great distress is occasioned, no severe measures of treatment should be entertained.

It is not probable, however, that we shall often be consulted by any so effected, except when their infirmity gives rise to apprehension from rapidity of growth or the disquieting effects it may produce.

Now, the problem before us is, What shall be the mode of treatment adopted which will, with the greatest degree of certainty and the least constitutional disturbance, effect a cure?

It might be said that a correct knowledge of the pathological changes leading to the evolution of these formations should point the way in this direction, which, as a primary conclusion, must be admitted; but there are many contingent circumstances which often force us into devious lines of therapy to meet the requirements of a given case.

An instinctive reasoning on the part of the patient, as well as our own experience, under all circumstances when the question of radical treatment of a morbid growth is considered, suggests first the adoption of those measures which will accomplish the desired results without serious risk to life. When we contemplate the cure of these tumors, we should, provided there are no impediments in the way, as a primary procedure employ the simpler remedy.

In the treatment of hydrocele, notwithstanding the venturesome surgery which modern advances permit in other serous cavities, little original has been added; substantial progress only has been made in obviating the dangers which frequently attended the more ancient operations. Under the head of *Hernia falsa* may be read in the work of Hippocrates a description of paracentesis or tapping for hydrocele; and the dissecting out of the sac, or tunica vaginalis, is later described by Celsus.

Counter-irritation, compression, acupuncture, bandage pressure, and other simple expedients have been tried in the past to dissipate these bags of water, and of late electrolysis has been used for the purpose of stimulating absorption, though its failures have been so general that it may be practically disregarded as an agent of little value.

In hydrocele we are permitted liberties in operating not applicable to any other of the serous cavities in treatment, and hence our aim is not, as in other serous accumulations, to relieve, although in accomplishing this object we may at the same time aim at destroying, the secreting elements of the serous membrane.

One comes to us with this infirmity, usually not only to be relieved, but to be permanently cured. If we can gratify these wishes for him at one and the same time an ideal result is realized. In appropriate cases nothing less should satisfy us in every instance.

A distinguished author has recently declared that there is no infallible cure for hydrocele, though he admits that the incision possesses the advantage of permitting an examination of the interior of the sac (*Venereal Diseases*, p. 21, by Robert W. Taylor, M. D.).

The modern radical measures recommended, exclusive of intravaginal injections, are:

1. Incision with iodoform, tamponade, and drainage (Volkmann's method).

2. Vaginectomy—resection of part of the vaginal coat; free irrigation with strong corrosive solution and drainage (von Bergman's).

3. Vaginectomy—resection of the entire tunica vaginalis, except the visceral basic attachment of the testis, and enough to cover it with close suture (Juillard's).

Atherton has treated cases with a large trocar and cannula, slipping through the cannula several coils of rubber tubing, which are left in to drain and provoke adhesions, from time to time clipping away a piece of the tube until it is all removed.

Cirechi has treated many cases successfully by introducing into the empty tunic a bunch of catgut. This he allows to remain there, with the exception of a few strands which he leaves in the incision for drainage (*Gaz. degli ospedali*, November 28, 1894). It has been found in the hydrocele *en bissac*, as well as the unilocular variety, that some time after a small incision and evacuation cure has followed. Moderately hot water, ice-cold water, and the accidental admission or insufflation of air have been reported as equally efficient. The latter agents probably act by diminishing vascular tension or in some manner inducing a healthy reaction, similar to what sometimes follows in encysted tuberculous peritonitis after laparotomy.

(*To be concluded.*)

The Buffalo Academy of Medicine.—At the last meeting of the Section in Obstetrics and Gynæcology, on Tuesday, April 28th, Dr. Montgomery A. Crockett read a paper entitled The Teaching of Obstetrics, and Dr. Irving M. Snow read one on Septicæmia in the Newborn.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. APPLETON & Co.
Edited by FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, MAY 2, 1896.

MORE CRITICISM OF THE "FRAUENARZT IN ALTONA."

LAST week we gave the substance of Dr. Ahlfeld's severe criticism of the conduct of a case of labor by Dr. Esser. In the April 11th number of the same journal in which Esser's account of the case and Ahlfeld's criticism were published, the *Centralblatt für Gynäkologie*, Professor Dohrn gives the luckless operator an additional rebuke. Dohrn not only condemns Esser's management of the case, but also criticises his way of relating its history. Before proceeding to give our readers an idea of what Dohrn has to say about the merits of the case, we may say that we thought it a trifle odd that Esser should call himself "Frauenarzt in Altona." It would be difficult to give a good reason for our having taken that view of the matter, but Dohrn also seems to see something humorous in it, for he dubs the man "der Altonaer Frauenarzt." In his opening sentences, Dohrn remarks that the past twenty years have witnessed excrescences of obstetrical practice that a conscientious critic must decidedly condemn. With a blind confidence in the power of antiseptic precautions to carry them through, men have regarded as permissible procedures for which it is doubtful if there was the slightest indication, and performed operations the technics of which they had not mastered; if, nevertheless, the case turns out well, he says, the perpetrator plumes himself on having broadened the indications for the particular operation. Among these exploits he classes Esser's performance.

Perhaps we shall convey Professor Dohrn's meaning in one respect more forcibly if we employ a slang word and translate *Muth* as "gall." Esser had the "gall," then, says Dohrn, to apply the forceps twice needlessly to the head of a dead immature child in the case of a multipara with a widely dilated os uteri, and then, after he had torn the head from the body, to resort to the Cæsarean operation. The woman recovered, and Esser argued from that result that he had enlarged the scope of the operation. Esser described the fœtus as an immoderately large dead and putrid monster ["eine 'übermässig grosse, todtfaule Missgeburt'"], but Dohrn rightly insists that a macerated fœtus must not be called a monster.

If we follow Esser's notes of the case, says Dohrn, we stumble against inaccuracies and contradictions which reveal the want of clearness in his understanding of it. In the first place, he could not content himself with estimating the efficiency of the pains; he could not observe a "proper efficiency," but only a "periodically recurring quaking of the uterus." But in spite of this lack of proper efficiency of the pains, he found the head at the pelvic outlet and the os uteri perfectly dilated; since only an hour had elapsed from the rupture of the membranes, it is evident that the expulsive powers were sufficient. The same uncertainty comes to light in his statements concerning signs of life in the child. He had ascertained that the woman had not expected to be confined until three or four months later, he had found very large fontanelles, and he had not been able to detect any fœtal heart sounds. All this ought to have been evidence enough that the child was dead, but Esser goes on to make the surprising statement that "no distinct funicular souffle was to be detected"; so he entertained the possibility that he might hear a distinct funicular souffle although the heart sounds were absent. Then he proceeds to give the dimensions of the pelvis. That, to be sure, says Dohrn, is always a gratifying sign of a thorough investigation, but when Esser represents that the conjugata vera measured thirteen centimetres, the utter worthlessness of such a statement founded on an examination made at that stage of labor is apparent. With the head of a macerated fœtus at the pelvic outlet, measurement of a conjugate of thirteen centimetres is no longer possible.

When Esser reached the woman, her temperature was 100° F., and her pulse 104; he diagnosticated "abortion, head presenting and abnormally large, distention of the uterus inexplicable at the time." The only proper thing to do, manifestly, was to wait, and Esser resolved to do so, but for how long? After waiting for about an hour he observed no noteworthy advance of the head, and he anæsthetized the patient and applied the forceps. This was the first serious error; the forceps should not be applied to the head of an immature and macerated fœtus. He fancied that he observed an advance of the head in consequence of traction, so he applied the forceps again. He now perceived that the instrument would not take a secure hold, and, how gently so ever he may have pulled, he tore the child's head off, whereupon the little arms were at once prolapsed. However unaware of it he may have been before, he might now have told from the parting of the head from the body that he was dealing with a macerated fœtus. But for him this was not enough; he introduced his hand into the uterus over the child's back and discovered that the umbilical cord was fragile—a wholly unnecessary intra-uterine procedure. That the distention of the fœtal trunk was also a manifestation of decomposition must have been clear to any well-informed person from the facts previously ascertained, and the right course to pursue was to extract the remains of the child, perhaps after puncturing its thorax or abdomen. Esser, however, decided to perform the Cæsarean operation, and the patient recovered. He assures us that in another case of the same sort he would resort to it again. Heaven forbid, says Dohrn, that he should ever have the opportunity!

We grieve for the young "Frauenarzt in Altona," thus ruthlessly scored by these great critics, but the lesson should

be a wholesome one, one by which young physicians who are more ambitious than conscientious may well profit.

MINOR PARAGRAPHS.

A GERMAN ESTIMATE OF AN AMERICAN BOOK.

It is gratifying to find that anything American seems praiseworthy in the eyes of Europeans, and it is with great pleasure that we record such a notice of Dr. John C. Warren's *Surgical Pathology and Therapeutics* as was published in the *Centralblatt für Chirurgie* for March 28th. The notice is by Dr. E. Martin, of Cologne, and it stands first in the number. The book is praised without stint—its beautiful appearance as well as its matter. This is no more than mere justice; Mr. Saunders should come in for his share of commendation, for author and publisher have together produced a book of which Dr. Martin says: "Eine grosse Zahl sehr lehrreicher *Originalabbildungen* makroskopischer und mikroskopischer Objekte in meist geradezu mustergültiger Ausführung schmücken das ausgezeichnet ausgestattete Buch, das gewiss einen hervorragenden Platz unter den zu Lehrzwecken verfassten Werken allgemein-chirurgischen Inhaltes verdient."

HOW EUNUCHS ARE MADE IN EGYPT.

According to M. Lortet, as we learn from the *Gazette hebdomadaire de médecine et de chirurgie* for April 19th, little boys from seven to ten years old are selected for one of two horrible modes of mutilation. By the first of these methods, the entire external genitals are slashed off with one stroke of a razor, as close as possible to the pubic arch, and the little fellow is at once immersed up to his neck in fine dry sand to check the hæmorrhage. After four or five days, the victim is brought forth from the sand, and a few greased rags are applied to the wound. By the other method, the parts are crushed off with a noose of packthread. The child's sufferings, it is needless to say, are dreadful. After this procedure, he is not buried, but the seat of mutilation is simply dressed with the bark of certain species of *Acacia* that are rich in tannin. Whichever method is employed, two thirds of the children die as the result of it.

THE RIVERSIDE BATHS.

The Riverside Association, of the general scope of which our New York readers are probably informed, has undertaken in the establishment of its hydriatic department what may in some degree be looked upon as a missionary effort—that, namely, of overcoming our American prejudice against the water treatment. It appears from a circular recently issued that three hundred and twenty-five patients have already been sent to it by their physicians, and we hope that further evidence of due recognition of the good work done by it may be shown.

THE *VIRGINIA MEDICAL SEMI-MONTHLY*.

We congratulate the editor and proprietor, Dr. Landon B. Edwards, on the evidence of prosperity shown in the conversion of his excellent journal into a semi-monthly and the adoption of a style of make-up suggestive of its coming transformation into a weekly, which we hope to see accomplished before long.

ITEMS, ETC.

Vivisection in the District of Columbia.—The following memorial of the Medical Association of the District of Columbia to the American Medical Association has been drawn up:

"*Whereas*, There is now pending in both Houses of the Congress of the United States a bill entitled 'A bill for the further prevention of cruelties to animals,' which, if enacted into a law, will prohibit vivisection or animal experimentation in the District of Columbia, and effectively close the biological laboratories connected with the Surgeon-General's Department of the United States Army, Bureau of Animal Industry of the Department of Agriculture, and Marine-Hospital Service, and prohibit all illustrative experimentation on living animals in the medical colleges of this District;

"*And whereas*, The proposed legislation is being urged with unremitting zeal and persistence by the humane societies and their coadjutors throughout the country, by personal solicitations of senators and representatives, by letters and petitions setting forth charges of cruel and atrocious tortures upon dumb animals committed by investigators and experimenters in medical and biological research, and by misrepresentation and perversion of facts established by biological and experimental investigation, to which the science of medicine owes its present stage of advanced progress and wider scope of beneficence;

"*And whereas*, It is not known to this association, or to any member thereof, that such alleged abuses and cruelties are being, or have been, perpetrated in any of the biological or medical college laboratories in this District, and it is assured by those in charge of such laboratories that such charges are without foundation;

"*And whereas*, The medical profession throughout the country does not seem to realize the significance and importance of such proposed legislation, which, in its direct operation, will be limited to the District of Columbia, but in its indirect effects will add impetus and force to this crusade against the scientific progress of medicine in general, this association appeals to the American Medical Association for such expression of the consensus of medical opinion on the subject as it may in its wisdom see fit to promulgate:

"*Therefore, be it resolved*, That the delegates of this association to the meeting of the American Medical Association, at Atlanta, Georgia, be instructed to present this memorial to that association and ask a prompt and favorable consideration;

"*Resolved, secondly*, That a copy of this memorial be sent to the *Journal of the American Medical Association*, with the request that it be published in the next ensuing issue of that journal."

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending April 28, 1896:

DISEASES.	Week ending Apr. 21.		Week ending Apr. 28.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus	0	0	1	0
Typhoid fever	4	0	14	3
Scarlet fever	117	12	120	9
Cerebro-spinal meningitis	1	3	4	2
Measles	509	39	447	24
Diphtheria	279	38	268	25
Tuberculosis	235	143	178	138
Small-pox	0	0	1	0

An Aged Physician in Distress.—The Charity Organization Society appeals for five hundred dollars to secure admittance into a home for a worthy couple. The case is a hard

one; an aged physician and his wife find themselves without means and without relatives or friends able to help them. Their reputation is excellent and their need is believed to be due to circumstances beyond their control. Money for this object should be sent to the Charity Organization Society, United Charities Building, No. 105 East Twenty-second Street, and will be duly and publicly acknowledged.

The Association of Alumni of St. Mary's Hospital.—The fourth annual meeting was held in Brooklyn on April 20th under the presidency of Dr. Onslow A. Gordon. Besides the president's address, the following papers were read: Rupture of the Uterus, by Dr. John C. MacEvitt; Flat-foot, by Dr. James T. Gallagher; and Pyelitis and Pyonephrosis, by Dr. L. E. Tieste.

The Late Dr. J. West Roosevelt.—At a special meeting of the medical board of the Roosevelt Hospital, held on April 17th, the following minute was adopted:

"The medical board of the Roosevelt Hospital has heard with painful surprise and profound sorrow of the sudden death of Dr. J. West Roosevelt.

"One of the youngest members of the attend'g staff, he had the hope and the promise of a long, useful, and brilliant career. Dr. Roosevelt's buoyant spirit, alert intelligence, and professional acquirements, united to his keen sense of humor and manly character, made him always a welcome presence and a valued counselor in the wards and in the deliberations of this board.

"We desire to put on record our high appreciation of his professional merits and his engaging personal qualities. Identified, as he was, by name as well as by an earnest sympathy and active co-operation with the work of this hospital, Dr. Roosevelt's untimely death must be deplored as a serious bereavement by the managers and by his colleagues in the medical board."

The American Pædiatric Society's Collective Investigation of Antitoxine.—The committee desires to announce that, owing to the number of physicians who have signified their wish to co-operate, the time for the reception of reports of cases has been extended to May 9th.

The Association of the Alumni of the New York Hospital held its fifth annual dinner at the University Club on Friday evening, April 24th.

The Woman's Hospital, Philadelphia.—Dr. Anna M. Fullerton, who for the past ten years has been physician-in-charge of the hospital, has resigned and will take up private practice in Philadelphia. She has not severed her connection with the Woman's Medical College of Pennsylvania, in which she is a professor.

The Western Society of Eye, Ear, Throat, and Nose Surgeons held its first meeting in Kansas City on April 9th and 10th. Seventy-five members were present. A programme of twenty-nine topics was gone through with. Dr. A. Alt, of St. Louis, was elected president; Dr. B. E. Fryer, of Kansas City, Dr. W. C. Pipino, of Des Moines, and Dr. J. W. Martindale, of Minneapolis, vice-presidents; Dr. Hal Foster, of Kansas City, secretary; and Dr. W. L. Dayton, of Lincoln, Neb., treasurer. The next meeting will be held in St. Louis, in April, 1897.

The Death of Dr. Constantin Paul, of Paris, is announced to have taken place on the 11th of April, after an illness of four months and a half. He was sixty-two years old.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from April 19 to April 25, 1896:*

Brooke, Benjamin, First Lieutenant and Assistant Surgeon, is relieved from further duty at Fort Canby, Washington, and, upon completion of his examination for promotion, will proceed to Fort Thomas, Kentucky, and report for duty at that station.

Fauntleroy, Powell C., First Lieutenant and Assistant Surgeon, is relieved from duty at Fort Riley, Kansas, and ordered to Fort Grant, Arizona, for duty at that post.

Heyl, Ashton B., Captain and Assistant Surgeon, is relieved from duty at Fort Thomas, Kentucky, and ordered to Fort Canby, Washington, for duty.

Shaw, Henry A., First Lieutenant and Assistant Surgeon, is granted leave of absence for one month, to take effect about May 2d.

Wilson, James S., First Lieutenant and Assistant Surgeon, is relieved from temporary duty at Madison Barracks, New York, and ordered to Fort Clark, Texas, for duty at that post, relieving Ware, Isaac P., First Lieutenant and Assistant Surgeon. Lieutenant Ware, upon being thus relieved, is ordered to Madison Barracks, New York, for duty.

The order detailing medical officers of the army to attend the annual meeting of the American Medical Association at Atlanta, Ga., May 14 to 16, 1896, is amended to direct them to attend said meeting from May 4 to 6, 1896.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending April 25, 1896:*

La Motte, H., Assistant Surgeon. Detached from the Franklin and granted four months' sick leave.

Johnson, M. K., Assistant Surgeon. Detached from the Naval Laboratory and Department of Instruction and ordered to the Franklin.

Society Meetings for the Coming Week:

Monday, *May 4th:* Association of American Medical Colleges (Atlanta); American Academy of Medicine (second day—Atlanta); New York Academy of Sciences (Section in Biology); German Medical Society of the City of New York; Morrisania Medical Society, New York (private); New York Medico-surgical Society; Brooklyn Anatomical and Surgical Society (private); Corning, N. Y., Academy of Medicine; Utica, N. Y., Medical Library Association; Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., Medical Society; South Pittsburgh, Pa., Medical Society; Chicago Medical Society; Cleveland Medical Library Association; Boston Medical Association (annual).

Tuesday, *May 5th:* American Medical Association (first day—Atlanta); Louisiana State Medical Society (first day—New Orleans); New York Neurological Society; New York Obstetrical Society (private); Buffalo Academy of Medicine (Section in Surgery); Elmira, N. Y., Academy of Medicine; Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Cattaraugus (annual—Salamanca), Columbia (annual—Hudson), and Orange (annual), N. Y.; Hudson (annual—Jersey City) and Mercer (annual), N. J., County Medical Societies; Androscoggin, Me., County Medical Association (Lewiston); Baltimore Academy of Medicine; Medical Society of the University of Maryland (Baltimore);

Connecticut River Valley Medical Association (Bellows Falls, Vt.).

Wednesday, *May 6th:* American Medical Association (second day); Louisiana State Medical Society (second day); New York Academy of Medicine (Section in Public Health); Harlem Medical Association of the City of New York; Society of Alumni of Bellevue Hospital, New York; Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond (Stapleton), N. Y.; Penobscot, Me., County Medical Society (Bangor); Bridgeport, Conn., Medical Association; Essex, Mass., North District Medical Society (annual—Haverhill); Plymouth, Mass., District Medical Society (annual).

Thursday, *May 7th:* American Medical Association (third day); New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua, N. Y.; Medical Society of the County of Orleans (semi-annual—Albion), N. Y.; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington); Ocean, N. J., County Medical Society (Tom's River); Cuyahoga, Ohio, County Medical Society.

Friday, *May 8th:* American Medical Association (fourth day); Yorkville Medical Association, New York (private); Brooklyn Dermatological and Genito-urinary Society (private); German Medical Society of Brooklyn; Medical Society of the Town of Saugerties, N. Y.; St. Louis Academy of Medical and Surgical Sciences; Cleveland Medical Society.

Saturday, *May 9th:* St. Louis Medical Society; Obstetrical Society of Boston (private).

Births, Marriages, and Deaths.

Married.

Barndt—Folts.—In Delavan, Wis., on Thursday, April 23d, Dr. A. S. Barndt and Miss Lizzie G. Folts.

Butterworth—Campbell.—In New Orleans, on Wednesday, April 15th, Dr. William Walton Butterworth and Miss Maud Campbell.

Driskill—Stratton.—In Corsicana, Tex., on Tuesday, April 21st, Dr. T. F. Driskill and Miss Anna E. Stratton.

Fuller—Cannon.—In Cheneyville, La., on Wednesday, April 22d, Dr. S. Jennings Fuller and Miss Daisy Cannon.

Heyl—Kilgour.—In Cincinnati, on Saturday, April 25th, Dr. Ashton B. Heyl and Miss Charlotte Kilgour.

McNab—Groat.—In Green Island, N. Y., on Monday, April 20th, Dr. Duncan McNab and Miss Amelia L. Groat.

Porter—McGough.—In Morton, Miss., on Thursday, April 23d, Dr. W. O. Porter, of Meridian, Miss., and Miss Edna McGough.

Died.

Behrend.—In New Orleans, on Thursday, April 23d, Dr. P. J. Behrend, in the thirty-first year of his age.

Fitch.—In New Haven, Conn., on Monday, April 13th, Dr. Clarence L. Fitch, aged thirty-eight years.

Going.—In Franklin, La., on Friday, April 17th, Dr. O. P. Going, aged forty-two years.

Goss.—In Tangipahoa, La., on Tuesday, April 21st, Dr. A. H. Goss.

Goss.—In Lakeport, N. H., on Sunday, April 12th, Dr. Oliver Goss, in the seventy-seventh year of his age.

Helmer.—In Milwaukee, on Monday, April 20th, Dr. A. M. Helmer.

Loewenthal.—In New York, on Tuesday, April 21st, Dr. Herman Loewenthal, aged sixty years.

Williams.—In Brookfield, Mass., on Thursday, April 16th, Dr. Amos D. Williams, aged eighty-eight years.

Letters to the Editor.

A PERFECT WINTER RESORT.

Miami, Fla., *April 20, 1896.*

To the Editor of the New York Medical Journal:

Sir: It may not be unbecoming the gravity of a medical journal to publish a few items of news concerning this town of Miami, Biscayne Bay, Florida, now being evolved as in a night into a perfect winter resort. It will be the latest and probably the last of Mr. Henry A. Flagler's contributions to the pleasure and health of the public. It is located on the western shore of Biscayne Bay near its northern extremity, and is divided by the Miami River, a clear and beautiful stream, which here enters the bay. Biscayne Bay is a shallow sheet of salt water, some forty miles long and from two to eight miles wide, situated on the extreme southeastern coast of Florida, and separated from the Atlantic Ocean by a long line of keys or small islands. The site of the town is immediately on the shore of the bay, and is elevated from twenty to forty feet above it, the elevation varying somewhat in different parts—nowhere low—and all of the land far higher above the sea than is usual in seaside or riverside places in Florida. The substratum and the surface of the town, instead of being the monotonous sand so characteristic of Florida, is a white coral rock with sufficient rich soil upon and about it to grow vegetables, trees, fruits, and flowers. The natural woods growth is cabbage-palmetto, live oak, and southern pine, so beautifully intermingled as to produce an effect much like that of a northern forest. Along the bay shore, near the water's edge, tall white trunks of cocoanut palms lift slender dark-green branches and leaves against the blue sky, and there the long, tremulous green plumes constantly wave in the ever-moving breeze. This tropical tree fruits freely here.

Miami is in latitude 25° 45′. It is needless to say to those who have been in Florida, and hardly necessary to those who have not, that the winter climate—a mild and moist one—is unsurpassed of the kind if not unequaled in the United States. If that is true in other parts of Florida it is doubly true here. But what those who have not experienced may be slow to comprehend or admit is that the spring and summer climate here is quite as agreeable as the winter climate. We are continually fanned by the southeast trade winds during the day, so that in the depths of July or August the shade temperature is seldom or never above 85° F. At night a blanket or light comfort is needed. Summer insects are said not to be at all troublesome, as at points farther up the coast, and mosquitoes are much worse in Chicago, St. Louis, and Cincinnati.

Given the background above described, Mr. Flagler and Mrs. Julia D. Tuttle, who was original owner of the land, are constructing upon it a modern Hygeia, after the pattern pictured by Sir Benjamin W. Richardson. Many miles of hard-paved streets are being cut and made in every direction beneath the live oaks, palmettos, and pines. A perfect sewerage system is to be immediately put in which will convey all sewage far out into the bay, beyond any danger of contamination of neighboring air or water, where ocean currents will carry it to sea. By clauses in the deed contracts all property pur-

chasers are prohibited from the use of surface closets, privies, or vaults, and thereby compelled to connect with the sewer system. Also, by limitations in the contract of sale of lots, all unsightly, malodorous, noisy, noxious, or dangerous business or factories are prohibited in the residence or merchandising portion of the city. Occupations of that kind which are necessary will be provided for in convenient places separate from the town proper.

There are to be water works and electric lights and probably street cars. The smooth, hard roadways will supply perfect bicycling facilities. In addition, Mr. Flagler is at this moment constructing on the bay front one of his famed palace hotels, from which the outlook will be over the broad bay to the opening between the green islands where may be seen the white-crested breakers of the Atlantic Ocean.

Such a perfect city as may grow from these conditions under the magic wand waved by Mr. Flagler seems like a Utopian dream. Nevertheless, the wonderful executive ability of Mr. Flagler, combined with immense financial resources, makes us believe that it will all be realized.

The diseases which a mild climate of this kind benefits and cures are well known to the profession, and require no special mention at this time. It may be noted that a walk along the bay always produces invigoration and the air here appears to possess a special tonic quality. This is attributed by some to the immense clouds of spray continually tossed into the air by the ocean breakers, three miles away, thereby freshening the air and perhaps adding a portion of ozone, which is constantly borne in by the steady trade wind.

George E. Walton, M. D.

PARTURITION MADE EASY.

Kent, O., *April 17, 1896.*

To the Editor of the New York Medical Journal:

Sir: In early parturition, when the labor is sufficiently advanced to satisfy the physician that it should continue to the end, firm pressure applied with two or more fingers to the lateral or posterior wall of the vagina and the vaginal sphincter muscles, during the time of uterine contraction excited by the discharges of motor energy from the cord, *awakens strong synchronous discharges of vaso-motor nervous energy from the ganglionic centres of the splanchnic and sympathetic, and possibly through its communicating rami further muscular contraction by discharges of nervous energy from the lateral motor columns of cord*, doubly increases the expulsive efforts of the uterus, assists dilatation, overcomes all pain, arrests the overgorging of the abdominal parturient venous vessels, especially of the uterus, thereby preventing the indraining of the blood from the brain and general muscular system, prevents faintness, exhaustion, and enervation, with their resulting danger of excessive uterine hæmorrhage, shortens the period of labor in every instance from three to five hours, and correspondingly lessens the danger of protracted childbirth.

This pressure further greatly assists in the separation and removal of the placenta and membranes, almost at once arrests all abdominal and uterine tenderness, and prevents the danger of post-partum hæmorrhage in large degree, by leaving the uterus in the best possible state to complete its proper involution.

Frank W. Root, M. D.

PARALDEHYDE IN ASTHMA.

Point Pleasant, N. J., *April 20, 1896.*

To the Editor of the New York Medical Journal:

Sir: In your issue for April 11th there was a reference to an article in the *British Medical Journal* by Dr. F. P. Hearder, on Paraldehyde in Asthma. I read the same with interest, as at that time I had a patient suffering from asthma; now I *haven't*.

Mrs. C., aged sixty, a washerwoman, robust, was taken with asthma after getting one heavy cold on top of another until she had to go to bed. She improved under tonics and poultices to the lungs and cough mixtures containing codeine until I read the above-mentioned article and decided to try paraldehyde for the remaining asthma. I gave her forty-five minims, and the dose was only taken once, when she was seized with vomiting and all the signs of collapse. They did not send for me, and, being away the next day, I did not see her until the second day, when the daughter told me that her mother had fainted away several times, had been very weak, and in a cold sweat all the time for the two nights and day, and that, another physician going by, they had called him in on the second day. When I saw her, the asthma was apparently gone, but she looked as though she was thoroughly used up.

If Dr. Hearder's cases were all so free from any unpleasant effect, why was it?

F. Whitaker, M. D.

Proceedings of Societies.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

SECTION IN OPHTHALMOLOGY.

Meeting of January 21, 1896.

Dr. William F. Norris, Chairman.

Partial Rupture of the Eyeball followed by Recovery, with Restoration of Vision to almost Full Acuity.—Dr. George Friebis presented a case that had occurred in a young man, eighteen years old. The right eyeball had sustained a large break through its corneo-scleral junction, extending beyond the equator, by the entrance of a piece of heated iron. The wound was sutured and vision had gradually risen to almost normal. When the patient was seen five years later, vision still remained the same.

Restoration of the Upper Lid Border by Hotz's Method.—Dr. George E. de Schweinitz made a brief communication upon this subject, and showed two patients upon whom he had recently performed the operation.

Retinal Glioma.—Dr. Howard F. Hansell showed a two-year-old child, of Russian parentage, who exhibited a well-marked clinical picture of retinal glioma in the left eye. It now could be readily perceived by ordinary inspection without the use of oblique illumination.

Dr. Friebis gave a short account of a similar case in which both retinæ were affected. In this instance there was a family history of an older child who was similarly affected and who died soon after enucleation had been declined.

Dr. William Thomson stated that it was a very interesting fact that the present case had not as yet presented any signs of increase of intra-ocular tension, thus rendering the diagnosis not absolutely certain.

A New Operation for the Preparation of an Orbit for the Insertion of an Artificial Eye.—Dr. George C. Harlan described the procedure. It consisted in an attempt to form an artificial sulcus by the passage of a stout lead wire through the base of a number of cicatricial bands and adhesions which connected the lids with the bottom of the cavity. The wire was passed around the bottom of the cavity, its ends were

twisted together at the external canthus, and it was to be allowed to remain in place until the tissue lining the passage that it formed had completely cicatrized. It was then to be removed by incising the cicatricial tissue in front of it, and an artificial eye was to be inserted the margins of which should rest in the position that the wire had occupied. The patient was shown several weeks after the insertion of the wire, which had occasioned scarcely any irritation, and the final result would be reported at some future meeting.

Steel in the Eye.—Dr. Charles A. Oliver exhibited a patient in whom, five years previously, he had removed a piece of steel from the vitreous chamber by means of an electro-magnet. The operation, which had consisted in passing a straight electrode carrying a current of thirty-five cell strength through an incision made through the sclera between the insertion of the external rectus and the inferior rectus muscles, had resulted in the extraction of a small piece of steel, and this had been followed by a rapid cessation of all inflammatory symptoms. The patient had been lost sight of until about a month before the meeting. When the patient was shown at the meeting the eye was perfectly quiet.

Dr. S. Lewis Ziegler showed a patient in whom a piece of steel in the vitreous had been removed by an electro-magnet. The case presented almost identical symptoms as the one reported by Dr. Oliver; although the same length of time had not elapsed since the operation, the eye had remained perfectly quiet and comfortable.

Dr. de Schweinitz gave brief notes of a case of laceration of the left eyeball caused by a piece of steel which had been broken from a cold chisel. The eye had partially collapsed, and vision had sunk to the ability to see to count fingers. In spite of the fact that, on account of extravasated blood, no foreign body could be detected, the patient had been etherized and the flat point of a Hirschberg electro-magnet (the current being obtained from a three-celled cautery battery) been introduced three times within the eye and moved in all directions, but withdrawn without securing the foreign body. Under careful treatment, the eyeball had assumed its proper shape and regained almost its normal tension in three days' time. In two weeks vision had risen to $\frac{6}{9}$, and the only ophthalmoscopic lesion visible was a large triangular white patch on the temporal side, indicating the point of rupture. Six weeks later, vision had fallen to $\frac{6}{15}$, and the entire vitreous was filled with fine points of opacities.

Dr. Hansell cited a case that he had seen about a month previously. Eleven days before being seen, the patient, a blacksmith, had been struck in the outer and lower scleral quadrant with a piece of steel. The point of an electro-magnet was carried into the eye through the wound of entrance of the foreign body, but nothing could be found. Panophthalmitis soon set in, the eye was removed, and a piece of steel was found imbedded in a mass of pus situated downward and inward from the crystalline lens.

Macular Hæmorrhage.—Dr. de Schweinitz described three cases of macular hæmorrhage, and presented water-color sketches of them made by Miss Margaretta Washington, of Philadelphia. The first was one of secondary glaucoma. In a month after the performance of a smooth iridectomy, which had at once relieved the pain and inflammatory symptoms, a small, absolute central scotoma had appeared. The ophthalmoscope revealed that this had been caused by a dark, venous-colored hæmorrhage, exactly replacing the dark area of the macula. Four weeks later, the hæmorrhage had disappeared, leaving but a faint discoloration to mark its former position, and vision had returned to its previous sharpness.

The second case had been seen in a sixty-six-year-old woman, the subject of chronic cardiac disease. Here a less dark-colored, similarly situated hæmorrhage, containing a few white dots in its centre, could be seen ophthalmoscopically in the left eye. There was an absolute central scotoma.

The third case had been seen in a sixty-three-year-old syphilitic. There was a history of a gummatous irido-cyclitis of the right eye requiring enucleation and of a parenchymatous iritis in the left eye. In April, 1895, Dr. Oliver had discovered a series of hæmorrhagic extravasations in the retina, with an unusually large one seated just below the macular region. In six months' time, Dr. de Schweinitz found that these had been absorbed, leaving a greenish-white area with a dirty-gray circumference, from the temporal edge of which a white line extended and terminated in some yellowish spots.

Dr. Oliver exhibited water-color sketches of the ophthalmoscopic appearances of the third case during the hæmorrhagic and the earlier degenerative stages, made for him by Miss Washington.

Dr. S. D. Risley gave brief notes of the case of a thirteen-year-old, apparently healthy child, who presented a dense red macular hæmorrhage in the left eye. In this case there was a central scotoma present.

Book Notices.

Pædiatrics. The Hygienic and Medical Treatment of Children. By Thomas Morgan Rotch, M. D., Professor of the Diseases of Children, Harvard University. Illustrated. Philadelphia: J. B. Lippincott Company, 1895. Pp. xii–17 to 1124.

We know of no book which contains so much pædiatric information that is in every respect modern as that of Dr. Rotch, and if at the same time we confess that we are disappointed in it, the latter assertion must not militate against the former, for the book has labored under the disadvantage that has attended many another long-heralded and long-expected work—namely, of expectation's placing it far beyond the possibility of realization. Its chief fault is unevenness; the first part of the book is exhaustive and in every respect superior, while the last portion is in comparison brief and condensed and suffers from the contrast. No doubt, had the compass of the entire work been that of its earlier chapters it would have far outrun one volume, and thereby have been made perhaps less acceptable, but no doubt, too, had the earlier chapters not been so remarkable the contrast would not have existed, and the charge of unevenness and of having been hurried in portions would not have been made. As it is, the book in this respect is a singular example of one which presents its own criticism, but beyond this nothing that is not laudatory can be said. Its matter is well chosen and well presented, it is sufficient in all parts and exhaustive in most, it shows the results of years of work and study, and it represents the views of one who is pre-eminent in the subject upon which he writes. Of special value are the chapters which concern feeding, and of these be it said that no other work can approach them in excellence or compare with them in any way. They are a treatise in themselves, and the discussion of modified milk which they contain is both timely and notable. The book is supplied with many illustrations, both in photography and in color. The photographic plates however, though in many instances excellent, in others are most inferior and represent the uncertainty which always

attends the use of this process in medical illustration, where clearness and perfection of detail are so essential. The colored plates for the most part are far too vivid in hue.

Therapeutics of Infancy and Childhood. By A. Jacobi, M. D., Clinical Professor of the Diseases of Children in the College of Physicians and Surgeons (Columbia University), New York, etc. Philadelphia: J. B. Lippincott Company, 1896. Pp. 5 to 518.

This work is in striking contrast with the majority of recent contributions to pædiatric literature, for almost without exception they minimize the importance of drugs in the treatment of the diseases of the young, while Dr. Jacobi at the very outset of his book defines his position in the statement; "For, indeed, I believe in medicines," and to its end he is thoroughly consistent with that assertion. That the author is extreme in these views of drugs and doses is perhaps true, and certainly he is dogmatic, but we know of nobody who from wide experience and deep study is more entitled to speak with authority and whose statements are more entitled to respect. The book is charmingly written; in fact, its tone is almost conversational and forcibly reminds one of the clinical lectures of the author. The subject matter is well chosen and well arranged and, presenting as it does "a compact picture of the therapeutics of infancy and childhood, as I have it in my mind," to quote from the preface, must of necessity be of great value. That the work in some respects is not so aggressively modern as some others may indeed be charged, but its conservatism we think is commendable, for it in no respect implies a neglect of the recent advances in pædiatric science; on the contrary, they receive thorough consideration. To say that the work is notable for its sound "horse sense" is to use a homely expression, but we know of none so apt to describe its predominant characteristic. It is this quality, indeed, which will make the work so valuable.

A Treatise on the Medical and Surgical Diseases of Infancy and Childhood. By J. Lewis Smith, M. D., Clinical Professor of Diseases of Children, Bellevue Hospital Medical College, etc. Eighth Edition, thoroughly revised and greatly enlarged. With Two Hundred and Seventy-three Illustrations and Four Plates. New York and Philadelphia: Lea Brothers & Co., 1896. Pp. xiii–17 to 987.

The high reputation which this work has enjoyed will certainly be fully sustained by its latest edition, for it represents the valuable features of its predecessors together with that revision and those additions which the progress of medical knowledge has made necessary. There is no dearth of excellent works upon pædiatrics, it is true, but the survival of such a work as this must necessarily command interest and respect. In one instance the revision is unsatisfactory, and that is upon the subject of artificial feeding. This certainly is a matter of the greatest importance and one upon which a far better chapter might have been presented; indeed, the subject has not begun to receive the attention it deserves. In this respect the work is in striking contrast with others upon the diseases of children, for they with one accord devote exhaustive consideration to the matter, holding that feeding, and necessarily therefore artificial feeding, are the most important problems which pædiatry contains. The question of modified milk is not even considered, and surely it is one upon which so comprehensive a work should speak.

The insertion into this edition of chapters upon the surgical diseases of infancy and childhood adds greatly to the value of the work. That they are written by Dr. Stephen Smith is an evidence that they are worthy additions, and we find them admirable in every respect. In one particular, however, two of the chapters upon surgical subjects—those on hernia and on the genito-urinary organs—are alarming, and that is in the matter of illustrations. Surely, never were such sexual organs seen upon infant or child, and we are forced to conclude that in magnitude of local development and in the possession of pubic hair these children are remarkable examples of precocity, or else that somebody has been misled as to the age of the subjects—or of the cuts.

A Pictorial Atlas of Skin Diseases and Syphilitic Affections in Photo-lithochromes from Models in the Museum of the Saint-Louis Hospital, Paris. With Explanatory Woodcuts and Text by Ernest Besnier, Physician to the Saint-Louis Hospital, etc.; Tenneson, Physician to the Saint-Louis Hospital; Hallopeau, Member of the Academy of Medicine, etc.; and Du Castel, Physician to the Saint-Louis Hospital. With the Co-operation of Henri Feulard, Curator of the Museum, and Léon Jacquet, Secretary of the Dermatological Society of France. Edited and annotated by J. J. Pringle, M. B., F. R. C. P., Assistant Physician to and Physician to the Department for Diseases of the Skin at the Middlesex Hospital, London. London: F. J. Rebman. Philadelphia: W. B. Saunders, 1896. Part III. Pp. 55 to 82. [Price, $3 each part.]

Though not at first sight appearing to be particularly interesting, at least from a pictorial point of view—not that the illustrations are in any sense inferior artistically to those of previous parts—this number of the *Pictorial Atlas of Skin Diseases and Syphilitic Affections* is especially rich in authoritative subject matter, for the masters Fournier and Besnier both contribute articles. In the first fasciculus Fournier deals with tertiary syphilitic ulceration of the tongue, and gives a valuable exposition of the principal types of ulceration of the tongue occurring in tertiary syphilis. He divides these types into two chief classes, for, as he says, the mode of classifying all forms of tertiary degeneration of the tongue under one head, *gummatous*, has had its day and is now replaced by the more appropriate subdivision of these lesions into two groups —viz., *sclerosing* and *gummatous* forms of glossitis. He further divides these groups into two varieties, a superficial and a deep. The second variety of the first group, deep sclerosing glossitis, is discussed with considerable emphasis, the author feeling authorized, as he says, by his past experience, to state that such *lingual lobulation is almost pathognomonic of syphilis.* Syphilis alone, he says, can thus lobulate the tongue; at any rate, it alone can do so to the extent described and shown in the accompanying plate. The other colored plates, with their supplementing woodcuts, all admirably illustrate the various points the author brings out in the other forms discussed.

The second fasciculus has a very beautifully executed plate illustrating what is described as a rare variety of Duhring's disease. It seems that this case has provoked considerable discussion ever since Hallopeau first published it, and the editor, in his footnotes to this article, adds a few historical points omitted in the text, which, however, do not seem to lift the diagnosis much further into light.

The next article has for its subject syphilitic gummata of the thigh; syphilis unknown and unrecognized. It is the report of a most interesting case and an excellent example of unrecognized syphilis, showing to what lamentable errors a patient may be led who is unaware of his having had syphilis. Feulard gives a graphic account of what the patient escaped

at the hands of two surgeons and endured with a quack before he came under the care of Professor Fournier at the Saint-Louis Hospital, where the correct diagnosis was made and confirmed. The writer further goes into the details of the case and brings out facts which make this a most interesting and instructive article.

Besnier contributes the fourth and last article of this number, and in it reports a remarkable case of disseminated epithelioma of the face, "sebaceous" in type at the outset. The plate admirably shows the various stages of the pathological process, from its inception to the complete development of its epitheliomatous character. The writer lays considerable stress upon the importance of early recognition of this lesion so that appropriate measures may be taken for its eradication at the onset, and gives a very clear summary of methods to be adopted toward this end.

BOOKS, ETC., RECEIVED.

Some Prolegomena to a Philosophy of Medicine. By Giles F. Goldsbrough, M. D., Assistant Physician to the London Homœopathic Hospital, etc. London: John Bale & Sons, 1896. Pp. 66. [Price, 3*s.* 6*d.*]

The Methodical Examination of the Eye. Being Part I of a Guide to the Practice of Ophthalmology for Students and Practitioners. By William Lang, F. R. C. S. Eng., Surgeon to the Royal London Ophthalmic Hospital, Moorfields, etc. London and New York: Longmans, Green, & Co., 1896. Pp. 96. [Price, $1.]

Climate and Health. Edited under the direction of Professor Willis L. Moore, Chief of the Weather Bureau, by W. F. R. Phillips, M. D. Vol. II, No. 1. A Summary of Statistics for the Five Weeks ending February 1, 1896. [United States Department of Agriculture.]

Transactions of the American Orthopædic Association. Ninth Session, held in Chicago, September 17, 18, and 19, 1895. Volume VIII.

Forty-seventh Annual Report of the Board of Control and of the Superintendent of the Central Indiana Hospital for the Insane. For the Fiscal Year ending October 31, 1895.

The Port Jervis Hospital. An Association of Physicians for Mutual Benefit. A Corporation for General Hospital Purposes.

An Address delivered before the American Orthopædic Association, Washington, D. C., in May, 1894, by the President, A. M. Phelps, M. D.

Modern Orthopædic Surgery. What it is, and What it should be, as the Members of the American Orthopædic Association by a Vast Majority Proclaim. By A. M. Phelps, M. D. [Reprinted from the *American Medico-surgical Bulletin.*]

Modern Orthopædic Surgery. A Reply to Dr. Shaffer. By A. M. Phelps, M. D. [Reprinted from the *American Medico-surgical Bulletin.*]

Medicine as a Profession. By Louis Faugeres Bishop, M. D. [Reprinted from the *Rutgers College Targum.*]

Can Antitoxine Statistics be Relied Upon? By Gustavus Blech, M. D., Detroit. [Reprinted from the *Journal of the American Medical Association.*]

A Peculiar Form of Iritis characterized by a Gelatinous Mass in the Anterior Chamber, at times resembling a Cataractous Lens. By S. Latimer Phillips, M. D., Savannah, Ga. [Reprinted from the *Atlanta Medical and Surgical Journal.*]

Places rendered Famous by Dr. J. Marion Sims in Montgomery, Alabama. Notes on a Trip to the Meeting of the American Surgical Association in New York, May, 1895. By Edmond Souchon, M. D., New Orleans, La. [Reprinted from the *New Orleans Medical and Surgical Journal.*]

Infantile Intussusception. A Study of One Hundred and Three Cases treated either by Intestinal Distention or Laparotomy, and a Report of Two Cases. By Frederick Holme Wiggin, M. D. [Reprinted from the *Medical Record.*]

Transactions of the First Pan-American Medical Congress, held in the City of Washington, D. C., U. S. A., September 5, 6, 7, and 8, 1893. In Two Parts. Parts I and II. Pp. vi–2250.

New Inventions, etc.

AN ELECTRO-THERAPEUTICAL CABINET.

By Franz Heuel, M. D.,
consulting surgeon to the city hospitals, randall's island, new york

The cabinet shown in the accompanying illustrations was constructed according to my designs and suggestions by Messrs. J. C. Vetter & Co., of New York. It admits of the scientific, most delicate, and safe manipulation of the Edison constant current as applied in electro-therapeutics.

Through it may be obtained by a simple connection with the ordinary lamp socket:

1. The galvanic current.
2. The faradaic current.
3. Combined galvanic and faradaic currents.
4. The sinusoidal current.
5. Various modifications of the above-mentioned.
6. The cautery current for heating electrodes and wire loops.
7. Currents for the illumination of all kinds of diagnostic lamps, from the smallest, as used in the cystoscope, to the largest of one-hundred-candle power for transillumination.
8. Motive power up to one-horse power for surgical drilling, sawing, etc.

Any and all of these currents may be modified in any way desired.

The cabinet consists of an upper and a lower compartment. In the upper compartment are the various translators, meters, switches, safety devices, etc., fastened to a slate base and back. To preserve them from dust and injury, they are protected in front by a removable plate-glass door, and in the back by a removable board. On the top of the cabinet is a fuse box with cable connections for any ordinary lamp socket, also a vibrator bell for the "timing device."

The lower compartment, as shown in the illustrations, has above a sliding shelf, of the entire width of the cabinet, for laying on instruments, etc.; below, a number of drawers for various articles to be used in connection with the cabinet. At the bottom is a removable front made to represent two large drawers. Behind this are the "motor-dynamo" and alternator, on a separate movable platform supported by heavy, rubber-shod casters, so that they may be easily inspected or repaired without moving the entire cabinet, which is on separate rollers.

On the slate base of the upper compartment are three sets of good-sized binding posts connected permanently below with three sets of conducting cords or cables, which roll up automatically on reels and are self-fastening, so that any length up to twenty feet may be used as required. When not in use, the metal tips of each cable are placed in separate wooden grooves in the small drawers underneath each set of binding posts, where they are out of harm's way. The end of each conductor has a narrow red or blue cord interwoven to indicate its polarity.

The left-hand set of binding posts and cable is for the cautery current; the middle set, for the galvanic, faradaic, sinusoidal, or combined current; the right-hand set, for the illuminating current. In this arrangement the different currents can be used together or independently of each other, as may be required.

On the slate back are fastened:

1. The meters—

(*a*) A milliampèremeter for indicating the current dose given to the patient. It has three scales—the upper from one to twenty-five, the middle from ten to two hundred and fifty, the lower from thirty to seven hundred and fifty milliampères—and is provided with a neat switch for placing it in or out of the patient's circuit, and for selection of scale.

(*b*) A voltameter to indicate the voltage used on the patient's circuit or on the Edison main. In circuit is a "volt-equalizer" (Vetter's) for use in case the voltage on the main line should exceed 110 volts.

(*b*) A switch for selecting the faradaic coil, with buttons marked to indicate the length and calibre of the wire used.

4. A scale with a sliding button to indicate the length of soft iron core within the faradaic coil.

5. A lever switch to regulate the speed of the motor-dynamo.

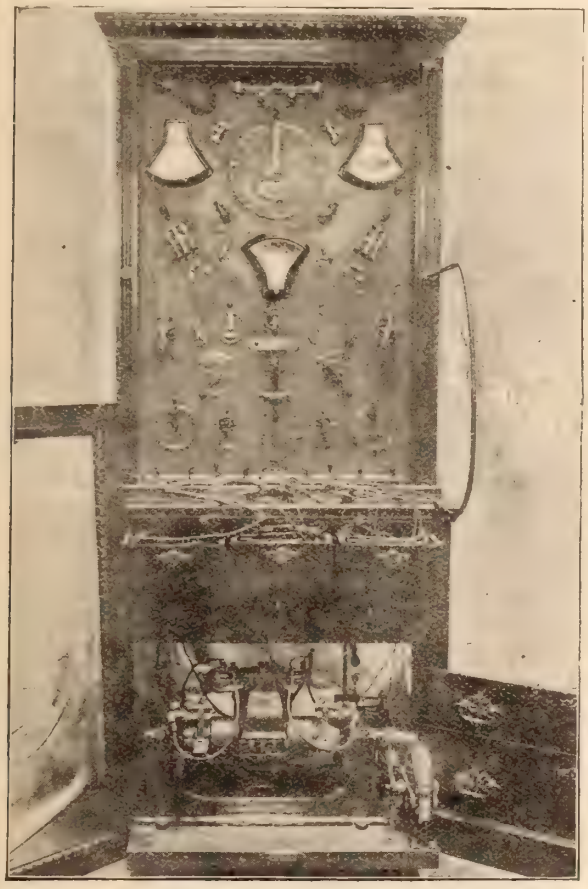
6. A commutator, or pole-changer, over the middle set of binding-posts, to indicate the direction of the current, and to change it as required.

7. A "timing device" which can be set to ring a vibrator bell, on top of the cabinet, at the end of from one to thirty minutes, for timing the application of the current.

8. An "electro-thermal cut-off," which automatically shuts off the supply of current from the cabinet at the end of a specified time. In case the current should inadvertently be left turned on, there will be very little waste of it.

9. Incandescent lamps for controlling the ampèrage of the various shunt currents.

10. A Vetter "volt-controller" (a large circular switch



(*c*) An ampèremeter, which indicates the ampèrage consumed in driving the "motor-dynamo," and the ampèrage used for individual cautery electrodes or loops.

2. Rheotomes—

(*a*) A vibrator for the galvanic current.

(*b*) A vibrator for the faradaic current.

(*c*) A high-tension ribbon vibrator for the faradaic current.

(*d*) An automatic clock-work vibrator for all currents, capable of producing from thirty to one hundred interruptions a minute at the will of the operator.

3. Current-selector switches—

(*a*) A switch for the selection of the galvanic, faradaic, sinusoidal, or combined current.

near the top, between meters), by which any pressure from one to one hundred and ten volts can be obtained for the galvanic circuit. The ampèrage is regulated by a "Vetter carbon current-controller" (in the centre of the slate base), through which from a fraction of a milliampère up to one ampère can be applied with absolute certainty and so imperceptibly that no sudden shocks to the patient are produced. This rheostat is always in circuit for the various currents.

The faradaic current is obtained through a long coil made of wire of varying calibre and length, and tapped at different points. It is modified by the different rheotomes and volt- and ampère-controllers, which give great range of current variations of quantity and quality and precise measurement of "dose."

The sinusoidal current is obtained from an "alternator" operated by the "motor-dynamo." In addition to being controlled by the adjustable speed of the "motor," it may be modified by the automatic clock rheotome and the volt- and ampère-controllers.

The "motor-dynamo," equal to one horse power, using from two to five ampères of current, also supplies a cautery current of from five to sixty ampères and twelve volts, which is under perfect control by a special rheostat. It also furnishes power for surgical drilling, sawing, etc., by means of the flexible cable attached at the middle and right-hand side of the upper compartment.

The illuminating current is obtained from the main-line supply and modified by the lamps and a special rheostat.

Special attention is called to the facility for practically and scientifically manipulating the various electric currents and to the absolute safety with which the same can be applied through this apparatus.

Miscellany.

Meniere's Disease.—In the *Presse médicale* for March 21st Dr. Heller relates the history of a curious case of this disease which followed a leucæmic alteration of the auditory nerve. It is the first time, he says, that a case of this kind has been mentioned in medical literature. The patient, a man, sixty-six years of age, had always had perfect health until the year 1894, when he began to be troubled with pains in the head and a feeling of extreme lassitude. During the month of June, 1895, he was taken suddenly with very intense vertigo and buzzing in the ears, after which he became unconscious. When he regained consciousness he found that he was almost completely deaf, and two weeks later the sense of hearing was entirely gone. From this time the patient was obliged to remain in bed, and the attacks of vertigo reappeared with such violence that he had to be sent to the hospital, where the physician diagnosticated the case as one of chronic leucæmia in the myelo-splenic form.

An examination of the blood showed that there were 2,600,000 red blood-corpuscles to 600,050 leucocytes—a proportion of one to four. Besides these there were a large number of elements containing a single nucleus, lymphocytes, "médullocèles," and some red globules which were isolated and provided with a nucleus. The spleen was enormous, and the liver also was considerably enlarged. There were very extensive bloody effusions.

An examination of the ear revealed the following changes: The membrane of the tympanum had lost its transparency; it was dull and shriveled. A tuning-fork was placed on the patient's head, but the vibrations were not heard with the left ear at all, and only in a very feeble degree with the right ear. No sounds, however loud, could be heard with the left ear. An electric current of from fifteen to twenty milliampères did not provoke the least sensation of vertigo.

The patient died on September 8th. The autopsy confirmed the diagnosis of leucæmia of the myelo-splenic form complicated with suppurative leucæmic effusions.

The two temporal bones and the medulla were submitted to a very careful examination. The bulb and the auditory nerve revealed the following changes after having been treated by Weigert's method: At a number of points along its course the nerve showed more or less extensive lesions of leucæmic infiltration, which were characterized by the presence of small cells. Near its point of emergence, and especially at the junction of its two roots, the same nerve was very greatly infiltrated; there existed, besides, near the neighboring pia mater, a thickening which was due to the presence of a micro-cellular infiltration. The fibres of the auditory nerve showed traces of degeneration in certain points along their course but the nucleus of origin was exempt.

No pathological changes were found in the corpora quadrigemina or in the cerebellum, and it was not possible to discover, at any point whatever, hæmorrhagic lesions or traces of bloody effusions. An examination of the labyrinth gave only negative results.

This case, says Dr. Heller, is the only example known in which Ménière's disease was provoked by a leucæmic process localized in the trunk of the auditory nerve.

The Employment of Sodium Bicarbonate in the Treatment of Different Forms of Dyspepsia.—The *Journal des praticiens* for April 11th contains an article on this subject by M. G. Linossier, who remarks that this drug is useful in deficiency of hydrochloric acid only when this affection is not due to a profound alteration in the glands. The essential condition of its action is that the mucous membrane should be still excitable; the amount of the dose is also a very important question. A very small dose produces an insufficient excitation, and with too large a dose the excitation produced is only enough to neutralize the alkalinity provoked by the ingestion of the medicament. A medium dose, then, says the author, should be employed, so that after a slight alkalinity the gastric contents may acquire an acidity greater than that usually present. It is impossible, he says, to give an idea in figures of small, medium, or large doses, for, in reality, the amount can not be absolutely determined; it is relative only to the gastric condition ascertained. The author explains the relation between the gastric acidity and the proper dose of sodium bicarbonate by saying that the sensitiveness to the action of this drug is in inverse ratio to the richness of the gastric secretion in hydrochloric acid. The doses should be reduced in proportion as the deficiency of the acid becomes more marked. If it is very intense, not more than eight grains should be given, for the digestion of a larger quantity would be too much work for some stomachs. If the deficiency is moderate, the dose may be increased to fifteen, thirty, or even forty-five grains. The author thinks, however, that there are some inconveniences in regard to the remote action of the drug if patients suffering with this affection are subjected to the habitual use of large doses, and that it is better to employ doses not exceeding thirty grains.

With regard to the time of administration, says M. Linossier, it is better to give it before meals, so that alkaline saturation may take place before the food enters the stomach, when it comes immediately in contact with the mucous membrane which is in a complete condition of secretory excitation. The larger the dose the longer should the interval be before eating; a quarter of an hour is sufficient for a dose of eight grains, but an hour is necessary for large doses. It is difficult, says M. Linossier, to lay down absolute rules in this respect, for the rapidity with which sodium bicarbonate is digested is very variable, but we may be guided by the following subjective symptoms: The ingestion of this drug by dyspeptic patients when fasting is followed by a feeling of satiety analogous to that caused by a very light meal; this sensation gives place, when the drug is digested, to a feeling of hunger. If the ingestion of food is deferred, and the excited mucous membrane continues to secrete, the patient experiences a sensation of tearing which occasionally produces

in. These symptoms, says the author, are not always very stinct, but when they are present they are an excellent ide. Sodium bicarbonate should be given at such a time at the hour for the meal coincides with the feeling of hunr. The employment of this drug should not be too pronged; a period of from two to three weeks with intervals rest is sufficient. This, says M. Linossier, is the surest eans of obtaining a remote exciting action, and there is no nger of giving rise to depression.

In regard to the employment of sodium bicarbonate in ses of excess of hydrochloric acid, says the author, the emical alkaline action of the drug may suppress the cause the pain and uneasiness, which are due to the contact of e mucous membrane with a very acid liquid. It may be ubted, he says, whether the exciting physiological action is t too much for a stomach already greatly excited; this acn, however, is not a contraindication to the use of the ug, provided it is administered in such a way as to prevent y ill effects. For this, it is sufficient to give the sodium in vided doses during the course of digestion, each dose being o small to cause complete saturation of the gastric contents; ere is no alkalinity, and therefore there is no violent excition. The fresh ingestion of each dose, moreover, destroys e effect of the preceding one in saturating the acid which secreted anew. The doses may vary from fifteen to thirty ains, according to the intensity of the excess of acid. The st dose should be given before the probable appearance of e pain; this is easy to determine, as the majority of patients e attacked at an invariable time before eating. The suceding doses may be given every hour or, if necessary, every lf-hour until digestion is finished. M. Linossier urges the cessity of prescribing the drug before the appearance of e pain, as it is generally easier to prevent it than it is to lay it when it has become established.

The tolerance displayed by the organism for this drug is, ys the author, remarkable, and the inconveniences of large ses are few as compared to their advantages. Sodium biarbonate may be prescribed alone or mixed with other drugs. he following prescription is often made use of by M. Linoser:

℞ Sodium bicarbonate.	300	grains;
Calcined magnesia.....	75	"
Bismuth subnitrate.....	30	"

M.

This quantity may be divided into twelve or twenty-five psules, according to the intensity of the acidity, and the roportion of magnesia and that of bismuth subnitrate may e varied in accordance with the intestinal functions.

The remote action of sodium bicarbonate, says the author, shown by the excitation and afterward by the depression f the secretion. The period of excitation is very distinct in any patients treated by this drug, and after a few days the riginal doses, which sufficed to allay the pain, become too eak to saturate the over-acidity, and they must be increased radually. The depression is the theoretical result of an inense and prolonged treatment, and it occurs in patients in hom excessive acidity is not very marked. After a certain ime the dose may be diminished by degrees and finally suppressed.

M. Linossier calls attention to the fact that in severe cidity, especially if it is accompanied by oversecretion, the ensitiveness to the action of this drug is greatly diminished, nd frequently only a palliative effect is obtained.

Oxysparteine as a Cardiac Stimulant in Chloroform Narosis.—The *Therapeutische Wochenschrift* for April 12th states that Langlois and Maurange have found oxysparteine hydrochloride more energetic than sparteine in sustaining the heart's action under the influence of chloroform. They recommend a subcutaneous injection of from four to six tenths of a grain, together with a sixth of a grain of morphine hydrochloride, about an hour before the operation. This reduces the amount of chloroform that has to be used, and the action of the heart remains regular and strong, even if the respiration becomes somewhat shallow. If the operation is to last for a long time—longer, for example, than an hour and a quarter—it is well to give another injection of a smaller amount of oxysparteine, without the addition of morphine, in about an hour after the beginning of the anæsthesia.

Irrigation of the Stomach with Nitrate of Silver.—Reale (*Riforma med.*, iv, 1895, No. 37; *Dtsch. Med.-Ztg.*, April 13, 1896) has employed Forlanini's treatment of chronic gastritis in twenty cases. In eleven of them the influence of the treatment on the chemistry of the stomach was investigated. Of the eleven patients, nine had chronic catarrh, mostly accompanied with a reduction of the amount of hydrochloric acid in the gastric juice; in one of them abnormal fermentation was enormous. In one of the patients, who had been assumed to have chronic gastric catarrh, cancerous stenosis of the pylorus was found after death.

At first the irrigations were performed with a solution of about three grains and three quarters of silver nitrate in a little over five drachms of water. The strength of the solution was gradually increased, but not to exceed twenty-two grains to the amount of water mentioned. The best results were obtained with these doses, which were rather large as compared with those recommended by Forlanini. Immediately after the use of the silver nitrate the stomach was irrigated with a solution of from three to five per cent. of common salt.

The results were as follows: The first thing observed was a heightened motor activity of the stomach, as was shown by the amount of decrease in the contents of the organ in the course of an hour after a test meal. This was accompanied by an increase in the secretion of hydrochloric acid. In all cases the vomiting was checked speedily and permanently and the general nutrition was promoted, for the patients gained in weight and in muscular power.

Human and Bovine Tuberculous Disease.—The following circular, dated April 20th, has been sent by Dr. Howard Carter, milk inspector of St. Louis, to the medical directors of the chief life insurance companies:

"We are convinced that the great prevalence of tuberculosis among dairy cattle and the transmission of infection to human beings through the meat, and especially through the milk, of such animals is not second in importance to any question confronting the intelligent medical men of the day.

"I have demonstrated the presence of the *Bacillus tuberculosis* not only in the lesions and pus, but in the *milk*, of cows apparently healthy which reacted to the tuberculin test, establishing the identity of bovine with human tuberculosis and confirming the examinations reported by Dr. Salmon and Dr. Smith, of the United States Department of Agriculture, and others.

"I am not aware that this aspect of the subject has been at any time brought to the attention of life insurance companies. Its direct bearing upon the public health, and consequently upon the death-rate, should commend it to them especially as a problem the practical solution of which would result in a saving of thousands of human lives and of millions of dollars annually. Not only would the death-rate be reduced, but an improved vitality would be developed in com-

ing generations by avoidance of the entry into the system of toxic germs which, if they do not directly lead to conditions resulting in death, may lie dormant until the general vitality is sufficiently lowered to permit of their full development.

"In bringing this matter to your attention I desire to request an energetic and persistent demand from the medical profession in general and from the directors of life insurance companies in particular for the enactment in all States of protective legislation, protection that *will* protect and benefit our whole people and diminish the ravages of this most insidious and dreaded enemy of the human race."

The Florida Medical Association.—At the annual meeting, held in Sanford on April 7th, the following resolution was adopted and the secretary authorized to send a copy to every medical man in the State, and to the insurance companies:

"*Resolved*, That it is the sense of this association, in convention assembled, that we most emphatically protest against the reduction of examination fees for life insurance, as proposed by the several insurance companies, and that we insist that so long as said insurance companies require the high and necessary standards of examination that have been in force, we refuse (and so advise all physicians in Florida) to make such examinations for less than the usual fees that have heretofore been paid."

The committee on the president's address and secretary's report recommend that the following extract from the president's address be published:

"The position of superintendent of the State Insane Asylum has been filled by a layman, as far as I can remember; now it strikes me this position should always be filled by a resident medical man, one who has had experience in this work before. An insane man is a sick man, and as such requires treatment for his physical ills, as well as a moral surveillance. I think it would be well if this association as a body should express itself on this subject, and make such recommendations to the governor and his council that at the next election this important position may be filled by a medical man."

The following resolution was adopted and the secretary ordered to prepare a circular setting forth said recommendation and send a copy to every physician in the State:

"We would urge all members to use their influence to, in the future, have a competent medical man appointed as superintendent of the State Insane Asylum."

A Proposed Hospital Ward for Nurses.—The following appeared recently in the *Evening Post:*

"Sir: It is a strange and most regrettable fact that in no one of the many and excellent hospitals of New York can there be found a bed endowed for the use and benefit of trained nurses needing medical or surgical care.

"This is the more strange when it is considered that most or all the private patients to whom nurses minister are persons of intelligence sufficient to realize the need for such a provision, and of means which would enable them to furnish it. In one hospital I know of such provision being made for 'saleswomen' and for 'firemen,' but nurses have thus far been neglected. Nursing is a most arduous and delicate profession—I might almost say an art. Nurses are human and liable to sickness, particularly because they are closely confined to their duties among their patients and are liable to contract disease when exhausted from their work. As they give, so when their own time of trial arrives they need, and should receive, the fullest sympathy and aid.

"Their surroundings in their lodgings are seldom such as make these suitable places in which to have proper attendance and medical treatment. This subject is impressed on my mind with peculiar force at this moment, because no less than three nurses of this training school are now under treatment at one hospital in this city. For such, and the greater need involved in the greater number graduated elsewhere, there ought to be endowed at once a small ward of, say, three beds, and I beg that you will consent to publish this my appeal to the public for subscriptions toward establishing such a ward in the Post-graduate Hospital. One bed can be endowed in perpetuity for five thousand dollars, and I hope three may be so endowed. The endowment of such a 'nurses' ward' would be a great boon to its beneficiaries, giving them assurance of the best skill—medical and nursing—and of that privacy which every woman values.

"When endowed, the beds will be free to any nurse holding a diploma from any American training school, and I am quite confident they will seldom be unoccupied. Subscriptions may be sent to your care or to me direct, and will be promptly acknowledged through your columns in either case. Checks should be made payable to the order of Dr. Bache McEvers Emmet, treasurer, and marked 'For Nurses' Ward.'

"In the confidence that all those who have benefited by the inestimable value of nurses' services in time of sickness—personal or in the family—will be glad to thus give practical expression to their appreciation of such,

"Ada Van Zandt,

"Superintendent Training School for Nurses connected with the Post-graduate Medical School and Hospital, 163 East Thirty-sixth Street.

"New York, *April 17th.*

"The undersigned take pleasure in indorsing Mrs. Van Zandt's appeal for the endowment of beds in a 'nurses' ward,' and commending it to the support of the public:

"Andrew H. Smith, M. D.
"George L. Peabody, M. D.
"W. B. De Garmo, M. D.
"William H. Thomson, M. D.
"William H. Porter, M. D.
"Robert Abbe, M. D.
"B. Farquhar Curtis, M. D.
"Augustus Caillé, M. D.
"Charles B. Kelsey, M. D.
"Seneca D. Powell, M. D."

Experimental Researches with Purgatives.—The *Revue internationale de médecine et de chirurgie* for April 10th contains an abstract of an article on this subject by M. Clopatt, which was published in a recent number of the *Archives de médecine expérimentale et d'anatomie pathologique.* M. Clopatt's experiments, says the writer, were carried out on rabbits, and with a view to observe the action of purgatives on the cells of the intestinal mucous membrane. The animals were plunged into a six-per-cent. solution of sodium chloride which was kept at the natural blood temperature. Laparotomy was done to permit of the isolation of an intestinal coil, which was put in communication with a graduated manometer.

The first seventeen experiments included the employment of infusion of colocynth, infusion of rhubarb, infusion of senna, calomel, castor oil, and croton oil. In all the cases, with one exception, no effusion was produced in the intestine, for the manometric pressure did not vary. The majority of the substances had not, moreover, any influence on the peristaltic contractions.

In seventeen other experiments M. Clopatt used sweet and salt substances dissolved in water. In a general way, they

gave rise to a considerable exudation on the surface of the intestinal mucous membrane. Frequently, also, the peristaltic movements were increased. Finally, the introduction of a six-per-cent. solution of sodium chloride into the intestine was followed by the absorption of a part of the injected liquid.

M. Clopatt's experiments, says the writer, although so carefully made, were made under very different circumstances from those that normally attend the action of purgatives, and it is not possible to draw any useful information from them. The traumatism due to the laparotomy and the isolation of the intestinal coil was sufficient to modify the peristaltic contractions.

The author's researches, he thinks, will be more conclusive when he proceeds to the histological examination of each intestinal coil experimented upon. As the substances did not cause any liquid effusion into the intestine, no microscopic alteration of the mucous membrane was revealed.

The second group of substances, on the contrary, says the writer, gave rise to profound modifications of the mucous membrane. In a moderate degree the cells of the epithelium were roused; then the villi lost their shape. In a more advanced degree the epithelial cells appeared disintegrated and altered, while Lieberkühn's glands preserved their cells intact. Finally, hæmorrhages were to be seen in the various intestinal coats.

It may be noted, says the writer, that the most marked modifications were caused by magnesium sulphate and sodium sulphate. Their seat of action was particularly the small intestine.

Excursions for Members of the American Medical Association.—The chief surgeon of the Southern Railway Company announces to members of the American Medical Association that the Southern Railway Company has arranged for the members and their families a complimentary excursion, on Wednesday, May 6th, from Atlanta to Lithia Springs, Ga., and back, on the occasion of an old-fashioned Georgia barbecue to be given at the Springs on that date by Mr. Marsh, under the supervision of the committee of arrangements of the American Medical Association. The chief surgeon of the Southern Railway Company also announces a complimentary journey for a limited number of distinguished members of the American Medical Association, to leave Atlanta on the evening of Friday, May 8th, to visit Lookout Mountain and Tate Epsom Springs, Tennessee, Hot Springs, Asheville, and the "Land of the Sky," western North Carolina, and back to Atlanta. Invitations for this excursion will be issued to members of the association after their registration with the permanent secretary. Guests are advised that the itinerary of this journey contemplates a connection at Salisbury, N. C., with the east-bound vestibule train for Washington, New York, and points east. For this excursion Pullman sleeping cars and other accommodations will be supplied for the invited guests, and illustrated souvenir pamphlets will be furnished, giving full descriptions of the points to be visited.

A Report from the Laboratory of the New York Pasteur Institute on Antitoxines.—Experiments recently made with the antitoxines of diphtheria, tetanus, and septicæmia in the laboratory of the Pasteur Institute have given the following results:

Diphtheria.—The injection into guinea-pigs of a quantity of this antitoxine (Gibier's) in a proportion of 1 to 150,000 of their weight has enabled them to survive an injection of two drops of the virulent culture of the diphtheria bacillus administered twenty-four hours later. One drop of this culture, inoculated upon the control animals, caused death in twenty-four hours. If these figures are reduced to immunizing units, according to the formula of Spronck, each cubic centimetre of this diphtheria antitoxine (Gibier's) contains three hundred units. The horses from which the serum is taken have received during the last twenty months over five thousand cubic centimetres of diphtheria toxine, each horse receiving an average of two injections weekly.

Tetanus.—The injection into guinea-pigs of a quantity of this antitoxine in a proportion of 1 to 1,000,000 of their weight enabled them to survive a fatal dose of tetanus toxine. The same dose given to the control animals caused death within forty-eight hours.

Septicæmia (Erysipelas Streptococcus).—The injection of this antitoxine into rabbits in a proportion of 1 to 10,000 of their weight has enabled them to resist a dose of streptococcus culture fatal to control animals.

A. Leteve, M. D., *Director of the Laboratory of Bacteriology.*
F. T. Labadie, M. D., *Assistant to the Hydrophobia Department.*
[Signed.] George G. Rambaud, *Assistant in Bacteriology.*
E. Esquerre, B. S., *Assistant in Chemistry.*
J. Esquerre, B. A., *Assistant in Bacteriology.*
Paul Gibier, *President.*

New York, *April 13, 1896.*

The Ohio State Pædiatric Society will hold its annual meeting in Columbus, on Wednesday, the 27th inst. Those who have papers to present should at once communicate with the secretary, Dr. George M. Clouse, of Columbus, giving the titles of papers. The other officers of the society are: President, Dr. S. W. Kelley, of Cleveland; vice-president, Dr. J. P. West, of Bellaire; and chairman of council, Dr. J. M. Dunham, of Columbus. Any regular physician who is particularly interested in pædiatrics and a worker in that branch is eligible to become a member of this young and growing society.

Guaiacol Carbonate in the Treatment of Typhoid Fever.—Dr. Arthur J. Hall, of Washington, in a letter published in the *Journal of the American Medical Association* for March 21st, discusses the so-called Woodbridge abortive treatment of typhoid fever. At the meeting of the Mississippi Valley Medical Association at Hot Springs, in 1894, he says, Dr. Woodbridge, as the result of several years' experience with this treatment, recommended three special formulæ containing guaiacol carbonate to the extent of thirty-three and a third per cent. Dr. Hall says that he has tried the Woodbridge treatment in a number of cases with excellent results, and that he believes that many of the statements regarding the amelioration of symptoms are well founded. But the same excellent results have occurred when guaiacol carbonate was used alone or in conjunction with mild laxatives and enemata when they were indicated. He believes that the good results obtained should be credited to the guaiacol carbonate alone, since the other ingredients (thymol, menthol, eucalyptol, podophyllin, and calomel) were in more or less constant use before the latter had been placed upon the market, and had failed to accomplish similar results.

A Chair of Comparative Pathology in Harvard University.—In an editorial in the *Boston Medical and Surgical Journal* for April 23d the writer says that the announcement has been made by a daily contemporary of the gift to Harvard University of the sum of $100,000 by a wise and thoughtful Boston

merchant, himself the son of a physician, for the endowment of a chair of comparative pathology in the Harvard Medical School. The holder of this professorship is to be a member of the faculty of the Medical School, and is to devote himself to research as to the conditions and causes of disease of both men and animals, and the means of avoiding and curing disease. He is not expected to be a practitioner of medicine. This, the writer believes, will be the first professorship of the kind established in connection with a medical school, and will surely not be the last.

A Dressing of Charcoal made from Rice Straw.—In the March number of the *Archives de cliniques de Bordeaux*, Dr. J. J. Matignon, of the Imperial Russian Legation at Pekin, states that M. Kikuzi conceived the idea of employing charcoal made from rice straw during the summer of 1891. It was employed with great success in the last campaign in the civil and military hospitals of Japan, in the latter of which its use is obligatory. It was also used during the earthquake at Mino-Owaré.

This dressing is a dark-brown, almost black, powder, and its qualitative analysis gives potassium, sodium, aluminum, and calcium salts, iron, chlorine, sulphur, phosphorus, silicates, and organic substances. M. Kikuzi found that its absorptive power was considerable and that it was very elastic. Its application was very easy and a regular and equable compression can be made on all parts, especially if the precaution is taken to inclose it in small sachets.

In regard to its disinfection, says the author, the mode of preparation is in itself a perfect disinfecting process. In order to obtain good charcoal from the straw, it is prepared in the same way as for ordinary charcoal—that is, by slow combustion. When this is accomplished the charcoal must be spread out to cool, and it must be separated as much as possible from the ashes. As charcoal readily absorbs and retains moisture, this dressing should be employed fresh.

With regard to the mode of applying it, says Dr. Matignon sachets of fine linen which are previously disinfected are filled with the powder and laid over the wound after washing and disinfection have been practised. The shape, size, and thickness of these sachets should depend on the regions on which they are to be placed. It is advisable to fill the sachets at the time they are to be used, although they will keep for several weeks if inclosed in a metal box.

Dr. Matignon thinks that charcoal presents the following advantages over gauze: 1. Its absorbing power is greater. 2. It is found everywhere and is rapidly obtained in large quantities. 3. Its disinfection is perfect and it can be used immediately. 4. Its elasticity is equal to that of gauze. 5. It is very inexpensive, and common straw may be used if it is impossible to get rice straw.

This dressing, says the author, is particularly adapted to army surgery, as its preparation is rapid and its aseptic qualities are perfect.

A Proposed Association of Railway Surgeons.—As many of the surgeons of the Southern Railway and of the Alabama Great Southern Railroad are expected to be in attendance upon the approaching meetings of the American Medical Association and the American Academy of Medicine, it is deemed advisable by Dr. C. M. Drake, chief surgeon of the Southern Railway Company, to invite all surgeons of these companies to meet in Atlanta on Monday morning, May 4th, for the organization of a railway association composed of surgeons of the two systems. The object of such an organization will be to promote acquaintance and friendly relations among the corps, and to bring about a free interchange of ideas and discussions of railway surgery and its further development. Dr. Drake invites all surgeons of the Southern Railway Company and the Alabama Great Southern Railroad Company, who can be present, to meet in the ballroom of the Kimball House, in Atlanta, on Monday, May 4th, at 9 A. M. He says that important papers on railway surgery will be presented for discussion. Several surgeons of prominence have already signified their willingness to present papers at this meeting. Important matters pertaining to the surgical department of the two systems of railroads will be presented at the meeting by the chief surgeon. Arrangements for reduced rates at the Kimball House and Aragon Hotel have been effected. Applications for transportation of company surgeons and members of their families should be made to the chief surgeon, Atlanta.

An Anomaly of the Hairy System.—In the *Progrès médical* for April 4th M. Bourneville states that he was recently consulted by a young girl for an ordinary affection, and that on seeing her he was struck with the following singular anomaly: The eyebrow and the eyelashes of the right eye were thick and black, while the inner half of the left eyebrow and that of the eyelashes were entirely blond. The outer half of the left eyebrow was black, although up to the age of six years the entire eyebrow had been blond. The left eye and the palpebral opening were somewhat smaller than the corresponding organs of the right side. Vision was equally good in both eyes. The hair was black over the entire front part of the head, but on the right side of the occipital region it was black sprinkled with a few blond locks, and on the left side it was half black and half blond. The patient assured the author that the hair on the rest of her body was black.

Balsam of Peru in the Treatment of Scabies.—At a recent meeting of the Société française de dermatologie et de syphiligraphie, a report of which appears in the *Presse médicale* for April 11th, M. Jullien and M. Descouleurs related their experience with this drug in three hundred cases of scabies in which the treatment had been systematically carried out according to the method recommended by Petters, Burchardt, Nothnagel, and others.

Balsam of Peru, the authors say, exerts a toxic influence on the acarus. M. Descouleurs has experimented with the drug and found that the acarus dies in from ten to twenty minutes after being subjected to its influence.

The application of the balsam is very simple; it consists in painting the entire affected surface with a light coating of the drug, and then rubbing it in gently. Owing to its volatility, it penetrates easily into the burrows. After the rubbing a bath is to be taken. In order to secure more certain results, M. Jullien recommends that the balsam be applied at night and the bath taken on the following morning. In this way, he says, the patients remain under the favorable influence of the drug for a greater length of time; this condition, however, he thinks, is not indispensable. If the disease is persistent, prolonged applications of the balsam may be employed, as it does not give rise to any irritation.

The authors state that they have employed this treatment systematically for five years, and that it has shown itself efficacious in all cases, even in those in which there have been serious relapses. They think that this treatment is especially indicated in patients suffering from impetigo, ecthyma, furuncles, eczema, cardiac troubles, albuminuria, etc. The advantages of this treatment are: 1. Its simple and painless application. 2. Its sure action. 3. Its moderate cost and the pleasant odor of the drug. 4. The fact that there is no contraindication to its use.

Lectures and Addresses.

SPECIALISTS AND GENERAL PRACTITIONERS.

THE PRESIDENT'S ADDRESS,
DELIVERED BEFORE THE
ASSOCIATION OF ALUMNI OF ST. MARY'S HOSPITAL, BROOKLYN,
At the Fourth Annual Meeting, on Monday, April 20, 1896.

BY ONSLOW ALLEN GORDON, M. D.,
BROOKLYN.

I PRESUME there is a time in the professional career of every physician, usually at the beginning of practice, when the question arises whether a specialty shall be chosen or the course of the general practitioner be followed.

It seems to me that very few can properly qualify for a specialty until they have had from five to ten years' experience in general practice; that there are notable exceptions, no one will deny, but their number is limited. Unless a practical as well as a theoretical knowledge of the whole field of medicine is obtained, the specialist is very apt to overlook the fact that the patient has other organs than those in which he is especially interested.

Within comparatively few years the field of the general practitioner has been very much narrowed, and present indications point to still greater inroads upon his field of usefulness. Should he be crowded into such narrow quarters that he will be unable to exist, the fault will be largely his own. It requires but a moment's reflection to convince one that the number of good, all-around physicians is rapidly growing smaller, and that the tendency is toward specialism. While I have nothing to say against specialism in medicine, and would not wish to go back to the time when there were no specialists, as we owe very much to them, and there are certain lines along which they can do better work than the man who tries to cover the whole field of medicine and surgery, I think that the general practitioner is too dependent upon them at the present time. A very large number of physicians (especially the younger members of the profession) are doing a larger business as distributors of cases than as practitioners of medicine; "they shake the bush and the specialist gathers the fruit." There is not a member of this association that has not repeatedly seen the specialist called upon to open a simple abscess, remove wens, dilate for anal fissure, remove tonsils, ingrowing toe-nail, perform circumcision, and do an innumerable number of operations that the family physician should blush to decline.

All surgical cases are sent to the surgeon, gynæcological cases to the gynæcologist, throat and nose work to the laryngologist, heart and lung affections to the chest specialist, nervous diseases to the neurologist, diseases of the rectum to the rectal specialist, genito-urinary ailments to the genito-urinary surgeon, joint and bone diseases to the orthopædic department, eye and ear troubles (however slight) to the ophthalmologist, and skin diseases to the dermatologist; we can also find specialists who will call us good fellows if we will turn over our stomach, kidney, and hernia cases; yet there are very few specialists who will decline to treat a patient, no matter what his ailment may be, if the *money* is in sight. While people of moderate means still tolerate the family physician as an obstetrician, the more favored in worldly goods are looking for a specialist when an accoucheur is desired. If matters continue on these lines, the specialist, or, more properly speaking, the general practitioner, will leave for himself possibly acute coryza and constipation. The tendency to rely on the specialist has grown to such an extent that there are many physicians who will not remove a retained placenta, suture a recently lacerated perinæum, however simple, open an abscess, or venture a diagnosis in any obscure case. It is the custom of the times that makes them hesitate to rely more on their own judgment and call into action the ability their patients have a right to expect them to have. It has been well said, "The wise and brave conquer difficulties by daring to attempt them."

Perhaps the time will come when the general practitioner will be consulted only as to the advisability of calling a specialist and whom to call. All this can but tend to belittle the family physician in the eyes of his patients, limit his ability, and impair his usefulness, to say nothing of his loss from a financial standpoint. The physician who has no confidence in himself can not expect others to trust him with their lives. I believe there will always be room for the well-equipped general practitioner, unless he persists in turning away all of his most interesting cases. By so doing he will help educate the rising generation to believe that they are to depend on the family physician to treat slight ailments only.

There is no reason why the graduate from any good hospital should not be able to perform in a manner creditable to the profession such operations as tracheotomy, thoracentesis, and amygdalotomy, repair the recently lacerated perinæum, attend to simple and many compound fractures, do minor gynæcological work, and a large share of the work that is referred to him as the family physician, and still leave enough for the specialist. A little self-confidence will often enable one to do as good work in such cases as the specialist, and at the same time advance his own professional and financial interests.

Practical Experiences with Antitoxine.—Dr. Kortright (*Brooklyn Medical Journal; Archives of Pædiatrics*), after a review of the present status of the antitoxine treatment of diphtheria, concludes as follows: Antitoxine serum is a remedy of great power in the treatment of Klebs-Loeffler diphtheria. Its use is followed in a certain proportion of cases by complications that are disagreeable, painful, or dangerous. These complications are more frequent where antitoxine has been given in cases of false diphtheria. Hence the drug is not to be lightly used, and only after bacteriological examination has shown the presence of the proper bacilli. A test of the purity of the preparation should be made immediately before its use by giving a precautionary injection to some lower animal.

Original Communications.

THE DIMETHYLAMIDOAZOBENZOL,

OR TOEPFER'S TEST FOR FREE HYDROCHLORIC ACID.*

By MAX EINHORN, M. D.

I should like to speak of something to-day which in a measure forms an advance in gastric analysis. Eight years ago I presented to you most reactions which serve the purpose of detecting free hydrochloric acid in the gastric contents. At that time I mentioned that Günzburg's reaction marked an advance in so far as by means of it it was possible to prove the presence of a mineral acid, a test which does not apply to any of the organic acids. In regard to this point, no better reaction until now has been found. Recently, however, Toepfer† suggested the new reaction, by means of which it is possible to determine the presence and amount of free hydrochloric acid. The substance which Toepfer used is called dimethylamidoazobenzol, and it was introduced into acidimetric analysis by Fischer and Philips. Toepfer first used it for testing the gastric contents. Dimethylamidoazobenzol colors a solution containing traces of free acid red. This reagent is best used as a half-per-cent. alcoholic solution, and the test made as follows: To a few cubic centimetres of the gastric filtrate add one drop of the dimethylamidoazobenzol solution; if it turns red, free acid is present. Filter paper saturated in this half-per-cent. Toepfer solution and dried becomes yellow, and may also be used for ascertaining whether free acid is present; the paper turns red when the latter is present. The sensitiveness of the paper, however, is far less than that of the Toepfer solution. The sensitiveness of Toepfer's reagent is very great. While Günzburg's test reveals one twentieth per mille of HCl, Toepfer's solution shows the presence of even one fortieth per mille of HCl—*i. e.*, this reaction is twice as sharp as Günzburg's. Toepfer stated that dimethylamidoazobenzol responds to free HCl and not to the combined hydrochloric acid, and that it gives no reaction with small quantities of organic acid, especially when albuminates are present. Thus, according to Toepfer, lactic acid in quantities amounting to less than one half of one per cent. does not give rise to this reaction; he therefore recommends dimethylamidoazobenzol as a very delicate and convenient test for the qualitative and quantitative determination of free hydrochloric acid in the gastric contents. Friedenwald,‡ of Baltimore, has corroborated Toepfer's statements in every particular, and anew warmly advocated this procedure. In order to ascertain the value of Toepfer's reagent I have made the following experiments:

A. 1. A one-per-cent. peptone solution containing 0·05 per cent. of lactic acid was mixed with one drop of Toepfer's solution; it turned yellow.

2. A one-per-cent. peptone solution containing 0·1 per cent. of lactic acid turned red when Toepfer's solution was added; the red color remained even after it was twice diluted with water.

3. A one-half-per-cent. peptone solution containing 0·05 per cent. of lactic acid turned slightly red with Toepfer's solution; when it was diluted three times with water the red color remained.

4. A watery solution containing 0·12 per cent. of hydrochloric acid diluted forty times became intensely red with Toepfer's reagent; when diluted fifty times it became very slightly red.

5. A one-per-cent. peptone solution to which hydrochloric acid had been added, so that it contained 0·012 per cent. of it, gave with Toepfer's solution a yellow color.

6. A one-half-per-cent. peptone solution containing the same amount of HCl gave also a yellow color.

7. A one-quarter-per-cent. peptone solution containing 0·012 per cent. of HCl gave with Toepfer's solution a very slightly red color.

8. A one-per-cent. peptone solution to which hydrochloric acid had been added, so that it contained 0·024 per cent. of it, gave with Toepfer's solution a yellow color.

9. A one half-per-cent. peptone solution containing the same amount of HCl became slightly red with Toepfer's solution.

10. A one-half-per-cent. peptone solution containing 0·024 per cent. of HCl, when titrated with a one-tenth standard solution of sodium hydrate and Toepfer's reagent as indicator, showed a degree of acidity of eight (for one hundred of the peptone solution).

11. A one-per cent. peptone solution to which HCl had been added, so that it contained 0·06 per cent. of it, gave with Toepfer's solution a red color, and showed on titration with it a degree of acidity of sixteen.

The same solution titrated with phenolphthalein as indicator revealed a degree of acidity of thirty-six.

12. A one-per-cent. peptone solution (Witte's) titrated with phenolphthalein showed a degree of acidity of six.

Experiments with Gastric Filtrates.—B. 1. Filtrate of patient K. one hour after the test breakfast: HCl = 0, acidity = 20, lactic acid = 0, biuret + intensely.

This filtrate gives with Toepfer's solution no reaction.

To four cubic centimetres of the filtrate is added one cubic centimetre of a one-per-cent. watery solution of lactic acid: Examined with Toepfer's solution, equals red color; examined with Günzburg's, equals no reaction; examined with Uffelmann's, equals canary yellow—*i. e.*, the test for lactic acid positively responds.

The same filtrate containing 0·2 per cent. of lactic acid, diluted with water ten times and examined with Toepfer's solution, gives a *red color.*

2. The gastric filtrate of David F. H., obtained an hour after a test breakfast: HCl = 0; lactic acid + (Uffelmann); acidity = 40.

The filtrate gives no reaction with Toepfer's solution.

To nine cubic centimetres of the filtrate, one cubic centimetre of a one-per-cent. lactic-acid solution is added: with Toepfer's solution equals red coloration with an orange tinge.

* Read before the German Medical Society of New York, September, 1895, with demonstrations.

† Toepfer. *Zeitschrift für physiologische Chemie*, Bd. xix, Heft 1.

‡ Friedenwald, J. *Medical Record*, April 6, 1895.

The same diluted ten times with water gives with Toepfer's solution a red color.

From these experiments it is apparent that Toepfer's reagent is by far more sensitive than Günzburg's solution. The latter reveals the presence of HCl up to 1 to 20,000, while Toepfer's reagent may disclose HCl when present in 1 to 40,000 or even 50,000 (experiment 4). Toepfer's assertion that combined HCl does not respond to his test is found verified in experiments 5, 6, and 8.

But with regard to lactic acid, I find that my results differ from those of Toepfer and Friedenwald. Both writers state that lactic acid responds to this test only when present in half a per cent. and above. Experiments 2 and 3 (A) show that lactic acid, if present in 0·1 per cent. even in solutions containing peptones, responds to Toepfer's reagent. The experiments with gastric filtrates to which lactic acid has been added (under B) again clearly show that one tenth of one per cent. of lactic acid gives a characteristic red color reaction with Toepfer's solution.

These experiments, therefore, justify the conclusion that qualitatively the presence of free HCl can be positively proved only by Günzburg's test, and that Toepfer's solution is not sufficiently certain, for organic acids may give the same reaction. If, however, free HCl has been found by Günzburg's test and lactic acid found absent (Uffelmann's test), then Toepfer's reagent is an excellent means of determining the amount of free HCl. The total acidity and the amount of free HCl can then be determined at once in the following manner: To five cubic centimetres of the filtrate add one drop of a one-per-cent. phenolphthalein solution and one drop of a half-per-cent. solution of dimethylamidoazobenzol; then add one tenth standard sodium hydrate solution until the red color disappears and the solution turns yellow (the number of cubic centimetres of soda used, multiplied by twenty, gives the figure of free HCl); then continue to add of the soda solution until there appears a red color (the total number of cubic centimetres of soda used, multiplied by twenty, gives the figure of the total acidity).

20 East Sixty-third Street.

THREE CASES OF HYSTERICAL MASTOIDITIS.*

By J. E. SHEPPARD, M. D.,

PROFESSOR OF OTOLOGY AT THE LONG ISLAND COLLEGE HOSPITAL AND AT THE NEW YORK POLYCLINIC; AURAL SURGEON TO THE BROOKLYN EYE AND EAR HOSPITAL.

I am not certain whether this term has been used in the writings on otology; if it has, I have not seen it. But whether it has or not, it is not my object to introduce any new term, which, I confess, I should be loath to do, but because I know of no other term so applicable to the following three histories:

Case I.—May M., American, aged eighteen years, ear patient No. 29,703 at the Brooklyn Eye and Ear Hospital; was first seen July 14, 1892. Is a worker in a bookbindery; general health rather poor than good; was sent to my clinic by Dr. J. S. Wood on account of her mastoid symptoms. The history she gave was of deafness in both ears for three years, and for the past three weeks pain in, and tenderness around, the right ear. H. D. R. w. $\frac{L.P.}{60}$; L. w. $\frac{3}{60}$; wh. R. 4″, L. 5′. Middle C tuning fork heard louder and longer by bone conduction than by air conduction in both ears; from the vertex, heard longer in the left ear. Before Dr. Wood saw her she had been treated by some one who had blown some powder (boric acid?) into the right canal, though for what purpose does not appear, as she gave no history of a discharging ear. Right canal still has a little of this powder adhering to the walls; the posterior wall looks a little redder than normal. Left canal normal. Right membrana tympani, considerable opacity, slight retraction; light reflex small and hazy. Left membrana tympani the same. There is apparently tenderness in the right canal, as well as below, in front of, and behind the auricle, over the mastoid. In the history I recorded that by otherwise occupying her attention firm pressure could be made over the tender parts without any evidence of pain, thus distinguishing this condition from furuncle, the disease with which it is most likely to be confounded. I gave the opinion that the trouble was hysterical, and ordered the ear left entirely alone; that the subject be entirely avoided or ignored by the family; and that the patient take sodii bromidi, gr. xv t. i. d. Five days later patient returned with the pain and tenderness almost entirely relieved, which relief proved to be permanent.

Case II.—Maggie M., aged twenty-one years, servant, born in Ireland, was referred by Dr. C. A. Whitney to me at the New York Polyclinic, where I first saw her on May 11, 1895. She says her general health is not very good, owing to some uterine trouble. Her head trouble she attributes to a fall of three stories down an elevator shaft, striking on her head. This fall occurred two years ago. For about a half hour after the fall there was bleeding from the left ear and from the nose; about two hours after the fall she became unconscious, remaining so for ten or twelve hours. Throughout the following day—not longer—she was very dizzy.

Her present ear trouble dates back two months, during which she says she has had pain in the right ear much of the time (has never during the two months been a whole day without pain), but that for the past four days this pain has been constant, severe, and accompanied by a constant "beating noise," and that for the past forty-eight hours she has felt at three distinct times so extremely dizzy as to almost fall, the tendency being to fall backward and to the right. Never any discharge from the ear except that above mentioned. She says she has no headache; only the pain in the ear. Around the mastoid apex is very great tenderness, but no infiltration. Pressure by the speculum against the posterior canal wall causes pain, but canal looks normal, the same exactly as right canal. Both drum membranes look the same, being slightly retracted and opaque in posterior half, with light reflexes about half size.

H. D. w. R. $\frac{48}{60}$, L. $\frac{6}{60}$. Tuning-fork tests: From vertex heard better in right ear; in the left ear A. C. louder and longer than B. C. for all five of the Hartmann series, but the absolute duration for both air and bone conduction much reduced from the normal, particularly so for bone conduction.

Patient says she had a chill last night, waking out of sleep with it, followed by fever and sweat. She says, further, that six or seven weeks ago she had a small swelling over left mastoid opened at the Vanderbilt Clinic. If this was true—which I doubt—it was a very minute opening, as the only

* Read before the American Laryngological, Rhinological, and Otological Society at its second annual meeting, in the New York Academy of Medicine, April 17, 1896.

mark which could possibly be taken for a cicatrix was a very indistinct one not over a quarter of an inch in length.

The diagnosis between true and hysterical mastoiditis was not easily made, in spite of the fact that some of the symptoms of the genuine disease were absent, and that some of the symptoms present did not necessarily belong to the disease. Still, my suspicions were aroused when I first saw her, so that for two or three days she was put on bromides and carefully watched at home. The proposal of an operation did not lessen the symptoms in the least; on the contrary, she seemed greatly disappointed when I finally told her very positively that I could cure her without operation. After watching her and making the diagnosis clear to my own mind, I determined that the best and quickest, though possibly not the only, method of cure would be by suggestion. Two séances of incomplete hypnosis with suggestion sufficed to bring about entire relief from all her symptoms. Possibly one might have been sufficient, but with the double purpose of greater certainty, as well as of experiment, I decided on two, limiting the suggested time of relief at the first séance, which turned out exactly as had been suggested, and at the second visit only was entire, permanent relief suggested and realized.

Case III.—Bridget J., aged twenty-two years, servant, born in Ireland, was referred to me at my office on June 25, 1895, by Dr. J. M. Peacocke for a diagnosis. She has had frequent attacks of quinsy; has consulted several physicians about her present trouble, without relief. About seven months ago had a severe head cold, which was shortly followed by her present trouble. Most of the time since then she has had severe pain in the right ear, as well as in front of, below, and behind the auricle; at first had loud tinnitus, but not much the past three months; has never had any discharge from the ear; has frequently great itching in the external canal; pain at first was so severe as to interfere with sleep, but not latterly; at times the pain is almost as severe in the left ear as in the right. H. D. w. R. $\frac{2}{6}\frac{6}{0}$, L. $\frac{6}{6}\frac{0}{0}$. Tuning fork at vertex heard equally in the two ears; A. C. louder and longer than B. C. in both ears. R. and L. meatuses normal; R. and L. membranes alike, not retracted, marked opacity, light reflex about half-sized and dim; right Eustachian tube normal; nothing in the nose, nasopharynx, or teeth to account for the pain.

I sent to Dr. Peacocke the opinion that the trouble was a hysterical one, and recommended that it be treated by suggestion. As to whether or not this was done, and, if so, with what success, I am unable to state.

I am actuated, in bringing these cases before the profession, by the belief that such cases may be unnecessarily operated upon unless we bear in mind the facts which, I think, these three cases prove—viz., that hysterical mastoiditis is a condition with which we may at any time be confronted, and that it may present symptoms so closely simulating the real disease as, at times, to make a diagnosis between them no easy matter.

135 Clinton Street.

Messrs. Parke, Davis, & Co.'s Catalogue.—The revision of 1896 is a most useful little book of reference for the practitioner, even if he is not interested in the prices. The lists may be perused to advantage as a reminder, and their arrangement is such that they are readily consulted.

OBSERVATIONS ON THE CREOSOTE TREATMENT OF TUBERCULOSIS OF THE UPPER AIR-PASSAGES.

By WALTER F. CHAPPELL, M.D., M.R.C.S. Eng.,
SURGEON TO THE MANHATTAN EYE, EAR, AND THROAT HOSPITAL, NEW YORK.

About three years ago my attention was specially drawn to the effect of creosote on tuberculous disease of the larynx. Since then I have treated thirty-two persons who had tuberculous deposits in some part of the upper air-tract with creosote internally and locally.

For internal administration, equal parts of beechwood creosote and compound tincture of gentian, thoroughly mixed in hot milk, have been the most satisfactory. This combination produces little or no discomfort, even in large doses. Some of the cases in this report have had the daily dose gradually increased until ninety drops were taken during the twenty-four hours; and in none was the use of creosote discontinued from stomachic or intestinal disturbances.

For local use, pure creosote and its solutions in alcohol were found to be too irritating. Solutions of creosote in castor oil, made after my published formulæ, have continued preferable to all others. These solutions are viscid and tenacious, and therefore especially serviceable for local use.

For administering submucous injections of creosote, nothing equals, in my experience, the automatic syringe and guarded needle already described in my first paper on this subject. To give satisfactory injections with an ordinary syringe, I am convinced, is impossible.

In choosing an automatic syringe for laryngeal work it is not necessary to have a strong, stiff spring. Care should also be taken that the thumb catch, which disengages the piston, works readily, otherwise the advantages of the syringe are not obtained. I also wish to again emphasize that in using the syringe we should be certain that the injection is a submucous one, and that the solution does not well up around the needle.

For local applications of creosote I previously recommended absorbent cotton on a laryngeal applicator as an effective method; but from further experience I have doubted the propriety of this in acute cases, and have resorted to the use of droppers. With a Mizpah dropper and laryngeal mirror solutions may be dropped in exact quantities into any part of the larynx.

An oral cavity with a long antero-posterior diameter requires droppers of greater length than those usually found in the market. These may readily be obtained from any druggist familiar with glass-blowing. Patients are easily taught to use the long droppers, and can themselves make laryngeal applications without difficulty. Weak solutions of creosote are preferable for these applications.

In acute pulmonary tuberculosis, with profuse expectoration, quantities of mucus cling to the larynx and walls of the trachea. In view of the possibility of this being a source of infection to the mucous membrane, may not applications of creosote be a reasonable precautionary measure?

All the patients in the thirty-two cases in this report had pulmonary and laryngeal tuberculosis, and three pharyngeal, one of the latter being primary and the two others secondary. In the primary pharyngeal case the deposit in the pharynx preceded the implication of the larynx by at least three months, and of the lungs by four months. A full report of this case will appear elsewhere.

One tuberculous ulcer of the nasal sæptum and four of the upper part of the trachea were also observed.

In ten of the thirty-two cases the subjective and objective laryngeal symptoms were acute when they came under my observation, and eight of the patients died within four months from that time. In one case the result is unknown, as the case passed from observation. In the tenth case the tuberculous process seems to have been arrested and the patient for the time being completely restored to health. This case came under my care in March, 1895, with extensive laryngeal thickening and ulceration and considerable pulmonary complication. After a positive diagnosis had been made, a thorough course of creosote treatment was instituted and continued for three months. The ulcerations and thickenings in the larynx disappeared, the temperature dropped to normal, and the patient's weight increased thirty pounds. The pulmonary symptoms also disappeared, and, as far as could be discovered, all the tuberculous process had been arrested. This patient has continued under observation till the present time without any relapse and seemingly in perfect health, although he has been unable to avail himself of favorable hygienic and climatic influences.

In twenty-two cases the history and symptoms pointed to a more or less chronic tuberculous process. Four of them have already been reported in my first paper on this subject. Since that report two of the cases have relapsed, supposedly from the conditions produced by a few weeks' sojourn at the seaside. In both cases a small, deep ulcer appeared, one being on the vocal cord and the other in the interarytænoid space. Applications of creosote produced healing in both instances after from five to six weeks' treatment.

Of the eighteen remaining patients, four were lost sight of, although much benefited while under treatment. The rest of the group are still under observation and in various stages of progress, the laryngeal appearance of three being as nearly normal as it is possible after so much infiltration and tissue change. They are also without any subjective symptoms, and are much improved in general health.

A great deal seems to depend on the proper selection of cases for treatment, so that the most suitable remedy and measures should be employed in the right way and at the proper time.

From the writer's experience, he believes that cases of tuberculous laryngitis may clinically be divided into two groups, one having more or less acute symptoms and running a short course, while in the other the whole history of the disease is of a prolonged or chronic character. In the acute cases the afternoon temperature is always above 101° F., and the pulmonary involvement considerable and progressive. The initial laryngeal deposit usually appears in the interarytænoid space or on the arytænoid cartilages as a superficial pearly gray infiltration of the mucous membrane immediately beneath the epithelium. The infiltration progresses rapidly, and produces a tense, almost translucent appearance of the mucous membrane. In a very short time small disseminated yellow spots appear over the tense surface, resembling follicles plugged with secretion. The engorged follicles soon break through their epithelial covering, pour out a quantity of secretion, and leave a small ulcer. The previous redness and infiltration subside considerably, but the minute points of ulceration rapidly coalesce and produce a large ulcerating surface. The writer has watched a case in which these various stages were traversed in twelve hours.

In the acute form of tuberculous disease laryngeal applications should be carefully made of remedies non-irritating in character; otherwise deposits which are perfectly quiescent may readily become active and ulcerate. From three or four daily observations made in a case under my care for three months, I noticed that about every two weeks some point of laryngeal infiltration gave evidence of renewed activity—increase of temperature, laryngeal secretion, and soreness being the prominent symptoms of this condition, and resulting usually in some new spot of ulceration. Two weeks later the same cycle would be repeated.

It is not difficult to imagine that strong solutions of lactic acid or creosote might readily precipitate and aggravate the recurrence of these attacks. By carefully watching the temperature and condition of the mucous membrane, any period of activity may be anticipated, and this time selected for a submucous injection. At this period injections will frequently arrest a process which would otherwise have progressed to ulceration.

After ulceration has occurred, slightly stimulating and soothing solutions may be used. The weaker creosote solutions fill these indications, but their employment must be carefully watched, and discontinued if they are too stimulating.

In the more protracted forms of tuberculous laryngitis, the hypertrophic infiltrations are either in the form of small localized thickenings and neoplasms of considerable size, or as a general thickening and hypertrophy of the mucosæ, especially of that covering the ventricular bands and arytænoid cartilages.

In the first group, submucous injections of creosote, persistently used, will produce atrophy of the smaller masses, and even the larger ones may be considerably diminished. The latter, however, are more quickly removed by forceps. The group consisting of general infiltrations are seemingly the result of disseminated tuberculous deposits, producing chronic inflammation, slow in progress, and continuing for months without ulceration. The chronic form of this disease also seems to have occasional periods of activity, when symptoms of a more or less acute character appear; at this period ulceration occasionally takes place. The ulcers are usually small, deep, and localized. The cycles of activity depend greatly on the condition of the pulmonary organs, and are accompanied by similar processes in the lungs.

This form of the chronic affection is specially benefited

by submucous injections of creosote, as the latter do not necessitate any loss of tissue, and eventually arrest the tuberculous process in many cases. The injections should be made deep into the tissues, and after the reaction subsides another spot selected, and the injections repeated until the entire infiltrated surface has been covered.

Several months are sometimes necessary to complete this, if the infiltration has been extensive. The injections should be followed by soothing sprays and applications.

If an active period develops in this form of the disease, submucous injections should be postponed, unless it is evident that an ulcer is forming. In the latter case they may sometimes arrest the process.

An ulcer in the chronic cases, treated by local applications of creosote, usually heals in from four to six weeks.

In conclusion, can we determine, from our experience in these cases, the following points:

1. Has creosote any beneficial action on tuberculous laryngitis and pharyngitis?

2. In what class of cases is its action most marked?

3. Are the results permanent, or merely temporary?

Regarding the first, there can be no doubt that the action of creosote, internally and topically, is beneficial at some period in many cases of tuberculosis of the upper respiratory tract. In one acute case the changes were remarkable, although, on the whole, the greatest relief and progress were obtained in the chronic cases. Small ulcerations are decidedly affected by creosote.

When the ulceration is extensive and progressing, creosote will occasionally produce cicatrization; in others, it limits the ulceration and modifies the pain and discomfort. In advanced cases nothing can take the place of cocaine for the relief of pain.

In the writer's opinion, the benefits from creosote are as permanent as from any other form of treatment, or as it is possible for them to be in a disease which is usually secondary to a similar condition in the pulmonary organs.

Of course, in giving injections one can not always be sure that every point of deposit has been reached. Appearances and symptoms may lead us to this favorable conclusion, and still a spot of infection may lie dormant until some renewed activity in the pulmonary organs rekindles it.

Again, although every particle of tuberculous deposit may have been reached, and the larynx left apparently healthy, reinfection may occur so long as there is any disease in the lungs.

15 East Thirty-eighth Street.

The Confederate Veterans.—Dr. C. H. Tebault, surgeon general of the Army of Tennessee, has been appointed by General Gordon, commanding the United Confederate Veterans, to fill the vacancy occasioned by the death of Dr. Joseph Jones. He is made surgeon general with rank of brigadier general. The services of Dr. Tebault, beginning at Fort Pillow and continuing to the end of the war, are already well known and recorded by the historians of that period. We congratulate the veterans upon the appointment by their commanding officer.—*Gaillard's Medical Journal.*

EXCISION OF THE CERVIX UTERI.

By J. O'CONOR, M. A., M. D., B. Ch., Trinity College, Dublin.
Senior Medical Officer, British Hospital, Buenos Aires.

During the past twelve months I have excised the cervix in eight cases for hypertrophic elongation associated with prolapse, and in two cases for most intractable dysmenorrhœa.

The method employed was original, so far as I am concerned, though probably to some it may be by no means new. Yet, as it is not mentioned in the text-books at my command, Pozzi, and Hart and Barbour, I venture to publish it.

Some days previous to undertaking this operation, if there should be any endometritis or endotrachelitis, the uterus is curetted and swabbed with pure carbolic acid.

In all cases the vagina is irrigated twice daily, for four days before the operation, with warm 1-in-2,000 corrosive-sublimate solution.

On the day previous an ounce of sulphate of magnesium is given, and followed on the morning of the operation by a large soap-and-water enema. The bowels having been thoroughly cleared out, the patient has a warm sitz bath (1-in-5,000 corrosive-sublimate solution); the urine is then drawn off, the vagina is irrigated, and the external genitals are washed with a 1-in-2,000 corrosive-sublimate solution before the patient is brought into the operating room.

Chloroform having been administered, a Simon's speculum is introduced, and the anterior lip is seized with a volsella and the cervix drawn, if possible, outside the vulva. At this stage irrigation with a 1-in-1,000 corrosive-sublimate solution is advisable.

One blade of a strong pair of angular scissors, bent on the flat, is introduced into the cervical canal for a distance of from a half to one inch, as may be deemed necessary; with one or two cuts half an anterior and posterior flap (O, B) is formed. The scissors are then turned and a corresponding cut (O, B′) is made on the other side. The cervix is thus split into an anterior and posterior flap (B, O, B′); to the latter another volsella is attached.

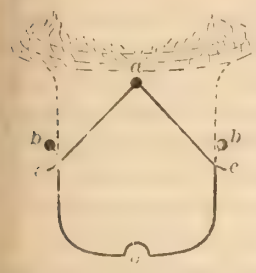
The bleeding from these incisions is trifling and does not interfere with further progress.

At a point (C) about a quarter of an inch from the end (B) of the first incision, one blade of the same scissors is entered and pushed obliquely upward into the cervical canal to a point as near as possible to the anterior fornix without opening it. A cut (C to A) is then made; on the opposite side the same manœuvre is carried out (C′ to A). Thus a wedge, O, C, A, C′, O, is removed from the anterior flap.

The whole thickness of the cut edges (C, A and C′, A) is grasped by a few Muzeux's forceps. There are usually two or three spurting vessels, but the bleeding can be conveniently arrested by applying the forceps just mentioned over them. With an ordinary curved needle four catgut (No. 2) sutures are passed from below upward, the ends of which are caught in a torsion forceps and handed to an assistant to hold. It simplifies the procedure to pass a suture behind a forceps controlling any bleeding point, so

that when the edges are approximated and the sutures tied no hæmorrhage takes place.

Out of the posterior flap an identical-shaped wedge is removed; but it must be on a smaller scale than that of the anterior in order not to open the posterior fornix or Douglas's pouch. Muzeux's forceps are applied and four catgut sutures inserted; these latter are at once tied; thus the posterior cut edges are drawn into apposition.



A sound or leaden probe is next passed into the uterine cavity and retained there while the anterior cut surfaces are approximated; all the ends of the sutures are then cut short.

The reason why the V incisions are begun on each side a quarter of an inch (C, C′) from the ends (B, B′) of the primary lateral incisions is at once obvious in that a slitlike orifice is left; thus the patency of the canal is secured. I usually make the opening oval by snipping off with a pair of scissors the corners of the four flaps. In order to be able to do this, the lowest of each of the anterior and posterior sets of sutures must not be inserted too close to the margin of the canal.

A small conical stump is left, which by the fifth day has usually disappeared, involution having taken place. All that remains is a cicatrix flush with the vaginal roof, in the centre of which is seen the patent canal.

Lastly, the vagina is again irrigated with 1-in-2,000 corrosive-sublimate solution and an iodoform glycerin plug introduced; this is withdrawn by the nurse in twenty-four hours, and the parts are irrigated twice daily with Condy's lotion.

By the eleventh day sound union has taken place and the catgut has generally disappeared.

The advantages alleged for this operation are:

(*a*) The ease with which it may be carried out; no special needles, no special anything (except cleanliness) are required, and it takes a shorter time to perform than any other.

(*b*) Hæmorrhage is trifling; the few spurting vessels are readily secured.

(*c*) Primary union always takes place.

(*d*) There is no danger of wounding the rectum or bladder.

(*e*) There is no subsequent removal of sutures.

(*f*) A considerable amount of involution follows, and the primary object, "lightening the load," is thoroughly carried into effect.

If by accident the fornices or Douglas's pouch are opened, one or two catgut sutures promptly inserted make up for the mishap.

In operations for dysmenorrhœa it must be remembered that the cervix is small and often conical; therefore this operation must be carried out in miniature compared with that for hypertrophic elongation.

In the ten operations performed no elevation of temperature or suppuration followed, and only during the first twenty-four hours was any pain complained of. All the wounds united by first intention, and no atresia of the cervical opening supervened.

In the eight prolapse cases this treatment was supplemented by colpo-perinæorrhaphy and ventro-hysteropexy.

In the two cases of dysmenorrhœa the patients report that they are free from pain at the menstrual period.

SOME OBSERVATIONS ON OBSTETRIC CASES.*

By JOHN H. BARRY, M. S., M. D.,
LONG ISLAND CITY, N. Y.

Impelled by an anxiety to invite reflection and evoke criticism on what seems to be a diversified and anomalous obstetrical experience, I am tempted to lay before you a summary of what has been met with by me in two hundred and fifty maternity cases. And mindful of my limitations as to number, yet fortified with the assurance that such summary will embrace many of the rarer obstetrical conditions, I cherish the hope that this dissertation will subserve the double purpose of being of interest to you, as well as broadening my observation and equipping me with a wider experience in the cases I may yet have to meet.

In a general way, one hundred and fifty of these cases might be dismissed without comment as being very ordinary in their conduct and furnishing no grounds for remark, inasmuch as they were simple, easy, uncomplicated vertex presentations. Out of the bulk of the aforesaid cases, it has been found necessary, for one reason or another, chiefly because of tardy labor or ineffectual pains, to resort to the use of the forceps in eighteen of them, a percentage of seven. I had most scrupulously refrained from its use in the first twenty-five cases with which I had met, and did not again use it in the succeeding thirty-five cases, a lower percentage than I have been able to maintain in the later years of practice. The first condition met with which necessitated its use was a case of eclampsia, in which seizures occurred during labor. A speedy delivery with the forceps, after the patient had been twenty hours in labor, was attended by like good results to both mother and child, although the former had six severe eclamptic seizures at average intervals of about three hours subsequent to delivery.

An enumeration of forceps cases and indications for the use of the instrument would show about the following: (1) Eclampsia. (2) Original face (high) presentation. (3) Inertia uteri. (4) Disproportion between passenger and passage way. (5) Delayed second stage. (6) Anencephalous monster. (7) Disproportion. (8) Disproportion. (9) Induction of premature delivery for incessant vomiting. (10) Eclampsia. (11) Disproportion. (12) Inertia uteri. (13) Face presentation, forceps tried after forced flexion. (14) Delayed second stage. (15) Dry labor. (16) Prolapsed cord. (17) Contracted pelvis. (18) Anencephalus.

Results of aforesaid cases: (*a*) Anencephalous cases, two; one stillbirth, one lived one minute. (*b*) Case in-

* Read before the Medical Society of the County of Queens, N. Y., February 17, 1896.

duced for incessant vomiting; stillbirth. (*c*) Face presentation; forceps tried, afterward version. Delivery resulted in death of fœtus. (*d*) One prolapsed cord case; stillbirth. (*e*) Contracted pelvis; fracture of child's clavicle.

All others, results eminently satisfactory to both mother and child.

And in this connection I point with pardonable pride to the fact that, rather through good fortune than any assumption of superior skill in the use of the forceps, no fœtus has ever been macerated, or even so much as excoriated, through my use of it. This consideration of itself might go far toward proving what I have frequently heard asseverated, that the forceps operation is the easiest one in midwifery; yet I beg to say that visions of direful consequences ever haunt me when the indications for the use of the instrument force themselves upon me, and fear and trembling stay an otherwise willing hand. I have yet to attain to that easy tranquillity and contentment of mind which years alone can bring, in rendering the forceps the synonym of a plaything or a toy.

In relation to the matter of laceration of the perinæum, I will not leave myself liable to the answer given to a late celebrated obstetrician at a society meeting when, asserting that he had scarcely ever met with a ruptured perinæum, he was charged by a debater with having either a poor memory or the affection of near-sightedness, but will assume my usual quota of that accident. My routine practice now is to attempt its repair, and I have met with fairly good results, though I must plead to a waywardness or lack of stamina on that point in the earlier days of practice.

Breech Cases.—A condition which has proved trying and interesting is that of breech presentation, of which I have met with twelve cases. Points of interest in them have been the diagnosis, the difficulty of shoulder extraction, also, at times, of the head, and the almost uniform necessity of resuscitation. Many a time have I been struck by the suggestive paradox of McLane's: "The first thing you feel in a breech presentation is that you feel nothing." I have always been led to suspect, or at least to think of, a breech presentation when there was difficulty in feeling any presenting part.

Shoulder extraction, while often difficult, usually yields to some patience and a little dexterity, especially if one remembers the injunction, "Never attempt to move a limb *in utero* except in the sweep of a natural movement."

I am not at all satisfied that tardiness or bungling in the extraction of the shoulders is not a potent source of stillbirths in breech presentation. Too much stress can not be laid upon the necessity of protracted attempts at resuscitation in these cases, as untiring efforts, even in seemingly hopeless cases, are often attended by most gratifying results. In breech cases *per se* I have had but one fatality to a child and none to mother.

In cases converted to breech, results have not been so gratifying, as I have had three stillbirths which seemed referable to this manœuvre—one transverse, one face, and one shoulder presentation; yet I have been recently successful in version of a seven-months' fœtus presenting by the shoulder and the case complicated by prolapsed cord.

Version has been found indicated in one case of twin pregnancy, in three transverse presentations, in three shoulders, two of which were complicated by prolapsed cord, and one face presentation, with an infant mortality of four and a maternal mortality of one, in which rupture of the vagina was occasioned.

Eclampsia.—A rather rare condition with which I have comparatively frequently met is that of eclampsia, of which I have seen five cases, with recovery in all to both mother and children. Two were speedily delivered of living children with the forceps; one case was a spontaneous twin delivery; in one labor was induced by tents (twin pregnancy)—both children were born living; one lived but a few minutes; the other had lived thirty-six hours in an incubator, when the accidental upsetting of the incubator lamp abruptly terminated its rather unpromising existence; and in one the seizures supervened upon delivery. The patient upon whom labor was induced has since died in confinement, I have learned, in New York.

The treatment has been by catheterism of the bladder, speedy delivery where practicable, croton oil in pill to act as a revulsive, poultices over the kidneys, chloroform in active seizures, and subsequently morphine, to the point of narcosis for some hours, and in one case for a day and a half.

Induction of Premature Delivery.—This has been called for in three cases—one case of twins for eclampsia, one case of hæmorrhage from marginal placenta prævia, and one case of incessant vomiting.

Post-partum Hæmorrhage.—This condition has been met with in six cases, three of which were typical; three others might better come under the head of "free bleeding," and were easily controlled by hot douches and subcutaneous injections of ergotole or ergotin.

In two cases the whole gamut of palliative and remedial procedures was run, including induced contraction or attempted strangury of the uterus under the hand, introduction of ice and sponges soaked with vinegar into the cavity of the uterus, elevation of the foot of the bed, subcutaneous injections of ergotole, etc.

In the remaining case the hæmorrhage came from a deep laceration of the cervix, and possibly laceration of the circular artery of the cervix after a forceps delivery. This case was controlled by bringing the cut surfaces of the cervix into apposition by deep suturing, with the finger and touch alone as guides. The result was most gratifying, yet in this case, as well as in two others cited, I never felt the necessity more mandatory of leaning heavily upon the help of a professional brother. One of these cases supervened upon the case of adherent placenta to be shortly alluded to. In the subsequent confinement of one of these patients, I provided for the help of a colleague, only to find there were no indications of the sort to be met.

Adherent Placenta.—I have frequently met with a fair amount of difficulty in expressing placentæ, have frequently had to extract them where Credé's method failed, have time and again had to trace a tendinous cord of membranes directly up to the cavity of the uterus in order to feel assured that no nidus of infection might be left, but

have met with one strictly typical case of adherent placenta where hæmorrhage was most alarming, where the uterus would invert itself upon traction on the placenta rather than the placenta come away.

In that case, after I had withdrawn what could be removed, the hæmorrhage abated considerably, but the patient was attacked with septicæmia, and upon curettement, a week later, several masses of placental tissue, each of the size of a walnut, were readily withdrawn. The patient, though very prostrated, and a supposed tuberculous subject, made a good recovery and enjoys good health to-day (two years later). My only fatal case of septicæmia was that of a partially retained placenta (as proved by curettement), where there was not, at the time of delivery, the slightest evidence of adherence of the placenta to the uterine wall.

Placenta Prævia.—This condition, met with only as the marginal variety by me, has failed, fortunately, to awaken that soul-stirring dread which we learn to be the unwelcome yet necessary attendant of any man confronted with a typical case of placenta prævia. My experience has been atypical. The patients have bled a great deal, it is true, yet I have only once been intensely worried about the ultimate safety of the patient. As I make no claim to cool-headedness, but, on the contrary, plead a nervous, apprehensive temperament, the inference seems clear that I have not met with placenta prævia cases strictly so called.

In one case, a woman, pregnant for the sixteenth time, was taken simultaneously with labor pains and hæmorrhage before my arrival. Marginal placenta prævia was diagnosticated and the indications for version were considered. Hæmorrhage alternately abating and recurring, and labor pains being sharp and effectual, the vertex soon blocked the hæmorrhage from the offending area, and delivery was rapidly and safely effected by Nature without any untoward results. The second case differed in no wise from the first in its general characteristics. The third case was that of a marginal implantation verified post partum from the fact of the dark, sloughing appearance of the marginal area.

Hæmorrhage was free, in this case due to a misplaced head, and the hand presenting down by its side, and occurred on two occasions at intervals of five days. After the latter hæmorrhage labor came on, the woman being about seven months and a half pregnant. The progress was slow and hæmorrhage fairly free until the hand was reposited, when the head came down and completely blocked the pelvis, and by its pressure checked the flow. Labor went on uninterruptedly and without any untoward signs, but the fœtus was born dead.

Accidental Hœmorrhage.—I have met with three cases of accidental hæmorrhage which were of interest and excited grave apprehension as to the security of fœtal life at least. In one case where severe hæmorrhage ushered in labor, and was more or less free during the greater part of its course, its cause was doubtless an intensely deep, thick, pocketed cervix, which, even while the rest of the uterus could be felt to be rigidly contracted, lay loose, lax, and atonic, seemingly incapable of being stimulated into contraction. This patient had already borne eleven children. The result of the labor was a stillborn, apparently premature child.

In another case, the hemorrhage was surmised to be due to the rupture of membranes close to the detached portion of a normally implanted placenta. Classifying, for convenience, recently mentioned cases under this heading, I may assume to have had two stillbirths as a result of, or at least associated with, this condition.

Multiple Pregnancy.—Met with six times. Cases have offered nothing noteworthy; have been, with one exception, combinations of vertex and breech. In one case in which I was called to assist a midwife, I found that one child had been born four hours, and that feeble pains, if any, attempted the expulsion of the remaining twin. Upon examination, I found that that twin was enveloped in a separate amniotic sac and rupture of the membranes perceptibly improved the pains. As the desired climax was not reached within a reasonable time, the ante-partum use of ergot was considered and agreed upon between Dr. Hinkson and myself. The result was eminently satisfactory, and it is not at all unlikely that the ante partum use of ergot had played some part in the non recurrence of post-partum hæmorrhage which signalized the patient's previous confinement already alluded to.

Prolapsed Cord.—I can recall three typical cases. Two were associated with shoulder, one with a vertex presentation. This condition as met with in the last mentioned case I should consider a grave jeopardy to the life of the child. I tried several times the reposition of the cord with the catheter and stylet, the patient being in the knee-chest posture, but all to no purpose. I then put on the forceps, and after some traction saw the previously turgid cord collapse. I hurried delivery with all prudent haste, but the child perished. I am firmly convinced that the safety of the child is best considered in performing version, and shall treat subsequent cases in that way.

Brow and Face Presentation—One brow presentation occurred in a case of anencephalus reported at length to the society in a paper on Monstrosities read a year and a half ago (*Med. Record*, December 29, 1894). One face case was treated with the forceps after inducing forced flexion of the head, but, owing to the lack of a trained assistant, I could not get the blades to hold. Subsequently I performed version. The fœtus was dead. Rupture of the vagina, previously alluded to, occurred. One other face presentation was converted spontaneously into one of the vertex. Delivery was tardy but satisfactory. There was a caput succedaneum over the left eye.

Shoulder Presentation.—Three cases. Two complicated by prolapsed cord. Podalic version twice, cephalic version once. One death.

Occipito-Posterior.—Two cases. No untoward effect; labor tedious but safe. In one the diagnosis was not made.

Hydramnios.—Two cases. One spontaneous stillbirth. Spontaneous delivery subsequent to a previous forceps delivery. Have met with six cases.

Superfecundation.—One case. The patient expelled what appeared to be a month and a half fœtus three days after delivery.

Transverse Presentation.—Four. Two attended before labor; one child stillborn.

Precipitate Labor.—Two typical cases; no deaths.

Hasty Labor.—Five cases; no deaths.

Excessive Albuminuria.—Five cases; no untoward effects.

Tedious Labor.—Twelve cases; no untoward effects.

Premature Labor.—As McLane ironically says, chiefly met with in primiparæ.

Premature Rupture of Membranes.—Six cases in which labor did not come on for periods ranging from a day to a week. No untoward effects from non-interference.

Intact Membranes.—Have met with several cases where the membranes pouted out of the vulva intact.

Delirium Tremens.—One typical case.

Hystero-epilepsy.—One typical case.

Anencephalous Cases.—Two.

Lues as a Cause of Stillbirth.—Put the patient, with a history of four successive stillbirths, on the use of potassium iodide and malt with cod-liver oil for the latter four months of pregnancy. Delivered her of a living child.

Violent Labor.—One case. Chloroform used practically throughout. Oncoming head threatened to lacerate everything before it.

Sequelæ of Labor.—Abscess of breast—three cases. Vulvar thrombosis—treated by incision and aseptic dressings; result favorable. Fissured nipples commonly met with.

Femoral Phlebitis.—Two cases; two recoveries; one patient died a year and a half subsequently from pulmonary infarction and supposed heart clot upon the resolution of recurring phlebitis.

Causes of Delayed Labor.—Among these I have commonly found œdematous lips of the cervix and shelving of the head over the pubes. The former condition has invariably been treated by manipulation, and pushing of it upward above the pubes upon the onset of a pain. The latter I have seen benefited by counterpressure and by the application of a firm bandage just above the pubes, in the hope of directing the presenting part better into the superior strait.

Among the anomalies, accidents, and diseases of the newborn babe:

Jaundice, commonly found. Have met with no fatal cases.

Abscess of babe's nipples. Three cases; recovery invariable.

Fracture of clavicle. One case; union good.

Imperforate anus. One case, fatal.

Eczema. I think I have found it most commonly in the offspring of albuminuric mothers. The causal connection, if there is any, I hope to study.

Child born with a caul. Three or four cases.

Mortuary Statistics.—Two deaths in all: one from septicæmia due to partially retained placenta; curettement; death on the thirteenth day—the other from rupture of the vagina; forceps, version.

Laparotomy for rupture. Death from shock thirteen hours later.

I should indeed be senseless of the abiding gratitude I bear them, were I to close this summary without acknowledging the profound thanks I owe to Dr. John Dorning, of New York, and to my colleagues and fellows of this society, Dr. Burnett, Dr. Frey, Dr. Hinkson, Dr. Burns, and Dr. Strong.

For whatever of merit can be found in my short life-work, I wish to publicly proclaim my assurance that to their gracious help and brotherly assistance I deem it in no small measure due.

147 Ninth Street.

NOTES ON

HYDROCELE AND SEROUS CYSTS IN THE INGUINO-SCROTAL REGION,

WITH SPECIAL REFERENCE TO MODERN TREATMENT.

By THOMAS H. MANLEY, M. D.

(*Concluded from page 586.*)

Dohokhotoff gives a digest of 119 cases treated by the iodine injection, followed by no complications. This author regards it as the simplest, safest, and surest in its effects, and "should be adopted in the overwhelming majority of cases" (German Surgical Congress, 1895, *La Semaine méd.*, January, 1896). Ehrman at the same congress declared that his results had been much more satisfactory after incision and drainage. Kussner, of Moscow, preferred the injection of a four-per-cent. solution of carbolic acid; while Millikin used the same acid in small quantities, liquefied, after thoroughly evacuating the fluid. Eve, of the Evelina Hospital in London, praises this as most potent and permanent in results, although the cases in which he tried it were all in growing children (*Internat. Med. Annual*, 1893). In contrasting the various measures of surgical treatment of hydrocele, Dr. J. William White properly says: "The method of treatment of hydrocele by tapping and injection is the method *par excellence* for those not familiar with the rules of surgery" (Dennis, *System of Surgery*, vol iii, p. 695).

Incision.—Free division of the investments of the testis, with proper precautions, in one exempt from organic disease or deranged general health, is the most efficient of all modern radical procedures. The efficiency of the simple evacuation of the fluid, as a measure of cure in itself in some cases, is proved, as stated, by the testimony of many observers. But its potency is enhanced by the introduction of the finger, which not only further clears up the diagnosis, but also enables us to explore the nude visceral envelope of the gland and epididymis, at the same time serving a therapeutic purpose. It is well known to surgeons that the mere touch of the finger over the peritonæum tends to displace the endothelial layer and produce adhesions. We should avail ourselves of our knowledge of this pathological law and apply it as a remedial aid by freely scraping the visceral and parietal endothelial lining of the vaginal cavity. Having accomplished this, in order to provide against accidental infection and to make the work of irritation or erosion efficient, we may flush the cavity with bi-

chloride, iodine, or phenic-acid solution. The latter is generally to be preferred, because the succeeding pain is less severe than with other irritants.

In three cases so treated by myself a cure succeeded. Two of them were hospital cases which I was unable to follow. In the other case the patient was operated on in private practice five years ago, and there has been no relapse yet. This is practically Volkmann's plan, except that he sutures the divided vaginal tunic to the scrotal integument and packs the cavity with iodoform gauze, a course to be preferred, perhaps, in very chronic cases.

Resection of Part of the Vaginal Coat.—This method is desirable in many cases when there is a great redundancy of hypertrophied vaginal tissue; but, in my experience, if we cut away any of it, it should be done thoroughly, and hence my preference in chronic cases is for Juillard's or Arbuthnot Lane s method of resecting the entire tunica vaginalis, except the gubernacular base, in which the wall of the testis is imbedded, or leaving enough only to overlap and invest the gland.

Baumgarten (*British Med. Jour.*, February 22, 1896) recommends that the entire hydrocele be well freed from its bed of connective tissue and the scrotum tucked away in aseptic dressings; then all that part of the tunica vaginalis except that which the testis is implanted on is clipped away. He then irrigates with 1-to-4,000 bichloride solution, then returns the testis. He employs no drainage-tube. He says that in these cases the testis has secured comfortable lodgment for itself free from adhesions.

In operations involving excision of the tunica vaginalis two things in particular should be specially guarded against. The first is hæmorrhage. In most of these cases we shall find that the superficial veins are greatly enlarged and that the arteries in the cremasteric fascia bleed very freely on division.

The cremasteric fascia contains a considerable share of elastic tissue and muscle fibre; hence, on division of it, there are retraction and unfolding of its separated edges which may make the ligation of the concealed bleeding vessels difficult and tedious. In all cases the peripheral bleeding should be completely subdued and the field made dry before the fibro serous envelope is divided. My own custom is to pass two fine sutures through the superficial fibres before sending the scalpel through. This prevents the inner envelope from escaping, and, besides, materially aids the further steps in the operation.

When we contemplate an extensive excision of the sac before it is divided, nearly the entire tunica vaginalis should be decorticated and raised out of the incision. While this is distended, the work of decortication is as simple as peeling an onion. We should only leave that part intact which supports the visceral attachment of the tunica albuginea, as suggested by Baumgarten, which was my own plan before I read his contribution. Hæmorrhage having been effectually suppressed, our next important concern is infection.

All the rules of modern asepsis must be vigorously enforced here. Life may be imperiled by a spread of inflammation up the funicular process to the peritoneal cavity, and local infection with suppuration means a dangerous, very painful, and tedious convalescence.

As the scrotum is largely made up of loose connective tissues, and orchitis follows all those open operations, the extent of swelling being always considerable, Senn recommends the elastic-garter bandage as a support to the scrotum after these operations (*Ref. Handbook of the Med. Sci.*, vol. iii, p. 317). My own preference is for loose, easy dressings, with only such pressure as the patient can comfortably tolerate. All depends on the primary dressing; hence, if this is applied with due skill and caution, it need not be changed for a week. My custom is to drain with catgut, which melts down and comes away with the discharges.

In my cases patients have been kept in bed two weeks, and at the end of this period the parts are usually closed, and the patient is permitted to go about.

Most writers are opposed to open operations in persons advanced in years. In the senile state vascular changes have set in, and the risk of failure is to be taken into account.

Within the past ten years thirty-one cases of serocystic disease of the funo-testicular tract have come under my care. Seven were supposed to be ruptures, the remaining twenty-four hydroceles; eighteen only were genuine hydroceles. They were all treated by me by the open method. All were entirely successful, though the oldest patient was but fifty-four years old. I have been able to follow only about half of them.

In closing these brief notes on the surgical management of hydrocele it may be emphatically stated that tapping and draining are but relief measures of expediency only, and that, when a radical cure of hydrocele is desirable or can be promised, free incision, resection, and drainage, in appropriate cases and by rigid adherence to aseptic provisions, are the most certain and definite means to attain it at our command.

Treatment of Cysts of the Scrotum or those lodged along the Funo-testicular Tract, complicated or not by Hernia.—When it is borne in mind that the pathology and anatomy of serous cysts and serous accumulations in normal cavities are widely different, it is but rational to assume that the treatment of each should be on dissimilar lines. Yet, while these premises hold good from a theoretical standpoint, the fact remains that obstacles may lie in the way which may make a similar course of treatment necessary for all.

For example, until a quite recent period, although little difficulty was realized in distinguishing an ovarian tumor, a nephrydrosis, or a hydatid cyst, from ascites, the trocar and cannula were called into requisition, *secundum artem*, with the same frequency for all. For those conditions, simple tapping relieved all, though it cured none, if we would except an occasional case of echinococci.

At the present day, to indiscriminately tap in every case of fluid accumulation within the scrotum without a thorough study of each case—puncturing, aspirating, or inspirating, regardless as to whether it is of inflammatory or neoplastic character—reflects no credit on modern progressive surgery and is not performing our full duty to the afflicted.

It might be said in support of indiscriminate tapping

of scrotal effusions, encysted or not, that here we may add the remedy of irritating injections, which will destroy the endothelial investment and obliterate the sac of either with the same degree of security. This, however, is by no means proved, and in any event is not in accord with those well-established principles of surgery which should now govern us in dealing with serous cysts in a part at once so accessible and far removed from any vital organ.

The tapping and injection of cysts, as a general line of practice, in any region of the body capable of ready and safe access is an antiquated and unsurgical procedure, by no means free from danger, always severely painful, and frequently unsatisfactory; it should only be employed as a makeshift when the operator is without the necessary skill or equipment for complete enucleation.

Of the thirty-one cases of fluid accumulation along the inguino-scrotal tract previously mentioned, twenty-four were supposed to be hydrocele, and the remaining seven were thought to be rupture. Among the seven cases of supposed hernia was that of a young lady who had been tortured with a truss.

Of the twenty-four cases of hydrocele, no fewer than six turned out, on examination and operation, to be cysts involving the spermatic cord. Four of these had been repeatedly tapped and two injected for the radical cure. Of the seven cases treated for hernia by the truss, three were simple cysts, which included the young lady's case; the four others were hernia complicated with hygroma.

Mistaken diagnosis in these cases arises from a superficial examination, incorrect statements of the patient, and a failure, particularly in the male, to locate the testis and appreciate its environment.

Of these hygromata, the point of beginning has been found to be usually just above where the processus vaginalis of the cord closes over the head of the epididymis. As the fluid accumulates the fibrous investment expands and in obedience to gravity sinks low down in the scrotum, pushing the testis aside in various directions, so that its position bears no fixed relation to the tumor.

In the cysts of large volume in this situation the testis may be readily isolated, as it lies outside and not inside the fibrous wall, as in hydrocele. In uncomplicated hydrocele the tense, resistant walls render it often impossible to definitely locate the testis. But in cystic disease, as in scrotal hernia, the position of the gland is fixed without difficulty. In the enucleation of these, their anatomical site and relations to other important structures make it necessary that certain precautions be observed in the course of operation. The first is to bear in mind that we may mistake a hernia for a cyst. Malgaigne cites an instance in which, in consequence of such an error, the intestine was opened, and death followed from peritonitis (*Malad. chirurg.*, vol. ii, p. 219). These tumors, like in carcerated hernia of long standing, are very tense. When their walls are thick, translucency is obscured, and, what is most deceptive, if they are situated high up and patulous, they may give an impulse on coughing or be partly reducible.

These growths within the funicular process of the cord have the same investments as a hernia, and in their decortication the same care should be exercised as in the liberation of a hernial sac—*i. e.*, the elements of the spermatic cord, which are commonly incorporated with the outer lamellæ, must be carefully separated and preserved. Difficulty in this direction may be entirely obviated if we make a free division down through all the underlying tissues until the cyst wall is reached, and then by turning away in opposite directions from the incision in two folds all the various layers *en masse*.

Of nine cases of these cysts which have been operated on by me, in none was the reaction following operation severe. In none was there relapse. In the reparative process here, healing may be delayed rather by a depressed constitution than by local conditions. This was decidedly manifest in two cases which were operated on by me since the beginning of this year, 1896.

In one case my patient was an English sailor, forty-eight years old, a heavy drinker, who had had syphilis. He was at the time of operation very thin in flesh, with a poor digestion and a feeble circulation. His scrotum had been drained four times previously for hydrocele. The cyst wall was very thick and so adherent to the pampiniform plexus that a most tedious dissection had to be made before the larger tumor could be freed and turned out.

Though no suppuration followed, the extensive inflammatory exudate which ensued occupied nearly two months in resorption.

The other was in a vigorous young man of thirty years, who dated the beginning of his swelling from the time he sustained a blow over the groin, six months previously. He now was a telegraph operator, and the enlargement had become so great that he could no longer conceal it or sit with ease on any hard surface. The thickening was so great that it imparted an unyielding density to the touch equal to that of a solid growth. Although it encroached far up the inguinal canal as far as the internal ring inside the funicular process, after its base was liberated below, the soft, fragile adhesions were easily broken and complete enucleation was not difficult. In this instance, on account of the extent of invasion, a large incision was necessary, and an immense chasm remained; yet in three weeks union was complete and the seroplastic deposit had quite disappeared, so that he was enabled to return to his duties.

My seven other patients all had rapid and uneventful recoveries. With the young lady there were several anatomical features of singular interest. The cyst was quite reducible. The protrusion had many of the characters of an ectopic ovary, a condition which I had formerly seen in a female infant. Removal of the ovary cured the hernia in that case. It was my intention to apply the same remedy here if, on incision, my diagnosis proved correct; but, when exposed, a thin-walled cyst ruptured, which seemed to spring from the broad ligament. Its colloid contents were curetted away and the parts closed. She came from a neighboring State, and now, about seven years since the operation, there has been no return.

Of the other cases, one was in a boy of six years. He had had a hernia on the left side in infancy which had been cured by the truss. A year later a fullness appeared in the scrotum of the right side. This led me to suspect the presence of another hernia, but careful examination convinced me that we had a cystic tumor to deal with. On incision, adherent to the epididymis was a pyriform tumor easily decorticated, though

it was attached to a very delicate fringe of omental tissue, intermingled with the elements of the cord. Of the five other patients, it was my pleasure to exhibit one to Dr. Paul Eve, of Nashville, Tenn., who honored the Harlem Hospital with a visit on one of my clinic days.

In considering the question of enucleation of these growths, it is generally advised, as in mammoth hydrocele, not to perform any extended mutilating operation for their cure in those advanced in years, as degenerative changes have probably involved the vessels; there is apt to be a diminution in the functional activity of the organs, besides the possible dangers following from full general anæsthesia. This is the view advanced in the late exhaustive work of Reclus and Terrillon on the subject of genito-urinary maladies, and is no doubt the correct one.

With those, therefore, sixty or more years old, presenting marked senile changes, or who are the subjects of progressive organic disease, even though evidence of isolated cystic disease of the scrotum or inguinal canal is incontestable, the least complicated and simplest operation should be performed. For this class effort should be directed with a view of draining away the cystic fluids and obliterating the serous walls.

To accomplish this purpose, the simple incision, with free carbolic-acid irrigation and drainage, meets the required wants as a means of relief and possibly permanent cure.

Conclusions.—In all cases of suspected hydrocele a most discriminating examination should be made. In simple hydrocele, when there are no contraindications, a radical cure should be undertaken. Cystic formations along the funo-testicular tract may be easily confounded with hernia or hydrocele. For the treatment of these in our time, the only rational, efficient, and permanent measure of relief and cure is complete enucleation.

All the scrotal operations demand the most perfect hæmostasis and rigorous asepsis, in order to obviate the two great dangers which lie in the way of all operations, hæmorrhage, primary or secondary, and infection.

Cold Applications in Pneumonia.—Dr. Thomas J. Mays, of No. 1839 Spruce Street, Philadelphia, asks us to publish the following circular, dated May 1st:

"To the Members of the Medical Profession:

"My two collective reports already published on Ice-cold Applications in Acute Pneumonia give a record of one hundred and ninety-five cases so treated, with seven deaths, or a mortality rate of 3·58 per cent. Being desirous of making as full a report as possible on this subject, I take the liberty of asking those who have tested this measure to kindly give me the result of their experience. Full credit will be given to each correspondent in the report which I hope to publish. Blanks for the report of cases will be furnished by me on application."

The Mountainside Hospital, of Montclair, New Jersey, has received a legacy of $10,000 from the estate of the late Dr. John W. Pinkham, who at the time of his death was a consulting physician to the institution.

The University of the City of New York.—The fifty-fifth annual commencement of the Medical Department was held on Tuesday evening, the 5th inst.

THE

NEW YORK MEDICAL JOURNAL,

A Weekly Review of Medicine.

Published by D. APPLETON & Co.

Edited by FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, MAY 9, 1896.

REGENERATION.

In the May number of our valued Chicago contemporary entitled *Medicine* there appears a notable article by Dr. Harriet C. B. Alexander, who writes under the heading of Training and Environment as Correctives of Degeneracy, as Illustrated by J. M. W. Turner and Margaret Fuller. The article is about fifteen pages long, but it is interesting throughout. Dr. Alexander's style of writing has great merits; whatever minor faults it has seem to be due to hasty work. Some of her expressions are strikingly to the point. Among them we have marked the following: "The vast majority of the children of degenerates exhibit a *tendency* to degeneracy rather than degeneracy itself." Speaking of Turner, she says: "His mind had only one entrance, his eye; but one exit, his hand; but these were cultivated exceptionally." "The poet Keats," says Dr. Alexander, "dying from the review of *Endymion* is pathos. The apothecary Keats, leading a coarse student life and, infected with tuberculosis, dying because of inherited delicacy of constitution and acquired parasyphilosis, is pre-eminently bathos. Shelley's revolted soul in *Queen Mab* and *Prometheus Unbound* is a sublime spectacle; Shelley whining over the laudanum bottle and hypochondriacally bewailing imaginary elephantiasis is a common morbidity." Speaking of Margaret Fuller, she says: "The woman who had been taught to appreciate Horace, that antidote to excessive emotionalism, was not likely to attempt to upset the world on a small salary," and again, on the occasion of her father's death "intestate" [does she not mean *insolvent?*]: "She was obliged to turn from German philosophy, then entered on, to a ways-and-means committee."

We have not space in which to give a summary of Dr. Alexander's ideas of Turner's character and the circumstances which enabled him to battle with some success against the original defects of his make-up, but we can not refrain from giving a considerable portion of what she says of Margaret Fuller. After quoting Margaret's own account of how her brain had been overstimulated while she was yet a mere child, and of how in consequence she had become a victim of spectral illusions, nightmare, and somnambulism, followed in her adolescence by various nervous derangements Dr. Alexander asks: "What changed this seemingly foredoomed neurotic from the hysteric possibilities truthfully pictured in the partly imaginary Zenobia? The father's and mother's training," she continues, "marred as they were by overstrain, tended to balance a nature which evidently from the mother inherited a neurotic tendency, with, however, a

good mental background. This training, with all its defects, was not the limited one which deprives so many hysterics of their feeble intellectual balance-wheel."

Dr. Alexander goes on to say of Margaret Fuller: "The time of her appearance in New England was peculiarly fortunate. Coexistent with an intense idolatry of the golden calf was an opposing spirit expressed in transcendentalism and the Brook Farm. Socialistic as this last experiment was, the Brook Farm experimenters learned the value of the individual: Hawthorne learned the lesson taught in the *Blithedale Romance*, that labor without individual aspiration degrades man to a cloddish machine; Charles A. Dana, from an æsthetically philanthropic potential Robespierre, became the genial practical satirist of the New York *Sun;* Emerson, from a potential puritan inquisitor forcing men to be good by law, became a Jeffersonian anarchist who preferred to see men free rather than strongly governed. The Brook Farmers, aside from the vegetarian Bronson Alcott, the 'potato gospeller' of Carlyle, became nobly self-reliant, seeing

"'How small of all that human hearts endure,
That part which laws can cause or cure.'

"To Margaret Fuller such an individual training was peculiarly beneficial. The play of contrasted intellects downed that primary egotism, the curse of the literary man, so conspicuous in Carlyle and so peculiarly poisonous to a potential hysteric. At its most socialistic phase Brook Farm aimed at the spread of socialism by example rather than force or legislation. The egotism of that most noxious parasite, the professional reformer, was kept completely in the background. Margaret Fuller's training as a boy, as injudicious friends entitled it, made her pedantic, perchance, but certainly self-reliant. Even her father's prohibition of perusal of novels and plays at the age of eight undoubtedly kept the emotional in the background, accompanied as it was by no directions what to read. This freedom in literature made her a brilliant conversationalist, interesting to grave men at the age of thirteen. Even then the training had done its excellent work. She had an infinite curiosity to know individuals—not the vulgar curiosity which seeks to find out the circumstances of their outward lives, but that which longs to understand the inward springs of thought and action. To her a human being was not the result of the presence and stamp of outward circumstances, but an original monad capable of certain fixed development and having profound personal unity. Despite this early depth of thought, her intercourse with girls of her own age and standing was frank and fascinating. Personal attractions and the homage they received awakened in her no jealousy. She envied not their success, though vividly aware of the worth of beauty. She loved to draw these fair girls to herself, and was never so happy as when surrounded by such a bevy. Without flattery or art, by the truth and nobleness of her nature she won the confidence and made herself the intimate friend of a large number of the belles of her day. With most of these she remained in correspondence during the greater part of her life. Her speech, though finished and true as the most deliberate rhetoric of the pen, had always an air of spontaneity which made it seem the grace of the moment. Though remarkably fluent and select, it was neither fluency nor choice diction nor wit nor sentiment that gave it peculiar power, but clear statement, keen discrimination, and certain weight of judgment, which contrasted charmingly with the youth and sex of the speaker. Her mind was of what is called the masculine type, more determined by ideas than sentiment; yet with this was combined a woman's passionate love for the beautiful which comprehended all nature and art. She derived an intense satisfaction from the contemplation of all beauty. She thought Taglioni's dancing a most beautiful expression of the poetry of motion. Her mind realized Tennyson's dream of that ideal time of The Princess when in the long years liker must the sexes grow."

Dr. Alexander concludes a very strong article by saying that the cant of ignoring the body for the benefit of the mind has had its day; that of unduly valuing the body has supplanted it. But *Mens sana in corpore sano* implies equal training of both. Emulation for the prizes of intellect is as destructive to mind and body as emulation for the prizes of athletics. In no small degree has the race survived numerous factors of degeneracy by virtue of the influence of environment unconsciously directed to the best purpose. The future will recognize the educator in the physician. To the savants who, forcing degeneracy to the front as a study, demolished the cant of human perfection, the race owes the same infinite debt of gratitude it does to the men who destroyed the ideas of the earth as a universe centre and man as *its* centre. Itard, Kerlin, Seguin, Koch, and Morel, says the author, have shown the correction of grave degeneracy by proper training.

MINOR PARAGRAPHS.

THE JENNER CENTENNIAL CELEBRATION.

The celebration of the hundredth anniversary of Dr. Edward Jenner's demonstration of the efficiency of vaccination as a preventive of small-pox, which before had been a deadly and ever-present scourge, has been fittingly undertaken by the American Medical Association, now in session in Atlanta as we write. As a souvenir of the celebration, an excellent print of Jenner's portrait has been distributed.

ITEMS, ETC.

The New York Academy of Medicine.—At the last meeting of the Section in Public Health, on Wednesday evening, the 6th inst., the disposal of the waste of great cities was considered in the following papers: The Collection and Disposal of Liquid Waste (Sewage), by Professor Charles H. Snow; The Collection and Disposal of Solid Waste (Garbage), by Colonel George E. Waring, Jr.; The Modern Methods of Sewage Filtration, by Mr. Allen Hazen; and Remarks upon the Clinical Effects of Bad Hygienic Conditions, by Dr. William H. Thomson and Dr. John H. Girdner.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending May 5, 1896:

DISEASES.	Week ending Apr. 28.		Week ending May 5.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus	1	0	0	0
Typhoid fever	14	3	4	3
Scarlet fever	120	9	86	11
Cerebro-spinal meningitis	4	2	6	6
Measles	447	21	410	17
Diphtheria	268	25	286	46
Tuberculosis	178	138	270	129
Small-pox	1	0	0	0

The Twelfth International Medical Congress will be held in Moscow from the 7th to the 14th of August, 1897. The following regulations have been published:

All those who desire to take part in the congress should communicate with the secretary general, and all communications and questions concerning the different sections of the congress should be sent to the president of the committee of each section before January 1, 1897.

French will be the official language of the congress for all international business matters. In the general meetings other languages will be permitted, and communications and debates in the sections may be in French, German, English, and Russian.

The subjects to be considered are as follows: 1. *Anatomy.*—Anthropology, normal anatomy, embryology, and normal histology. 2. *Physiology.*—Medical chemistry. 3. *General pathology and pathological anatomy.* 4. *General therapeutics.*—Hydrotherapy, climatotherapy, etc. 5. *Pharmacology.* 6. *Pharmacognosy and pharmacy.* 7. *Internal diseases.* 8. *Pædiatrics.* 9. *Mental and nervous diseases.* 10. *Dermatology and venereal diseases.* 11. *Surgery.* 12. *Odontology.* 13. *Military medicine.* 14. *Ophthalmology and Otology.* 15. *Laryngology and rhinology.* 16. *Obstetrics and gynæcology.* 17. *Hygiene.*—Sanitary statistics, social medicine, epidemiology, epizootology, and technical science. 18. *Legal medicine.*

The Buffalo Academy of Medicine.—At the last meeting of the Section in Surgery, on Wednesday evening, the 6th inst., Dr. Eugene A. Smith was to read a Report of Eight Consecutive Cases of Compound Fracture; and Dr. W. C. Phelps, a Report of Surgical Cases.

Physicians' Summer Addresses.—Dr. Samuel M. Brickner (New York), Far Rockaway, Long Island, June 15th to September 15th; Dr. Frank Irving Disbrow (New York), Saranac Lake, N. Y.

Changes of Address.—Dr. Andrew F. Currier, to No. 120 East Thirty-fourth Street, New York; Dr. E. L. Einhout, to No. 2298 Southern Boulevard, New York; Dr. Edward Fridenberg, to No. 242 Lenox Avenue, New York; Dr. Vincent Gomez, from Brooklyn to No. 137 East Twenty-eighth Street, New York; Dr. D. Edward Hoag, to No. 109 North Charles Street, Baltimore; Dr. Samuel Ketch, to No. 72 West Fifty-fifth Street, New York; Dr. Walter Eyre Lambert, to No. 8 West Thirty-fifth Street, New York; Dr. Joseph Muir, to No. 49 West Thirty-third Street, New York; Dr. Robert A. Murray, to No. 112 West Eightieth Street, New York; Dr. Charles E. Nammack, to No. 42 East Twenty-ninth Street, New York; Dr. Nathan Oppenheim, to No. 50 East Seventy-ninth Street, New York; Dr. William Stevens, to No. 70 West Fifty-second Street, New York; Dr. H. Sturmdorf, to No. 106 East Sixty-second Street, New York.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from April 26 to May 2, 1896:*

Appel, Aaron H., Captain and Assistant Surgeon, is relieved from duty as attending surgeon at Chicago, Ill.

Cabell, Julian M., Captain and Assistant Surgeon, will report in person to the president of the Army Retiring Board at Fort Columbus, New York, at such time as he may designate, for examination by the board.

Edie, Guy L., Captain and Assistant Surgeon, will, upon the expiration of his present leave of absence, report for duty at the Presidio of San Francisco, Cal.

Newgarden, George J., First Lieutenant and Assistant Surgeon, is granted leave of absence for twenty-one days, to take effect upon his relief from duty at Fort Wayne, Michigan.

Society Meetings for the Coming Week:

Monday, *May 11th:* New York Academy of Medicine (Section in General Surgery); New York Academy of Sciences (Section in Chemistry and Technology); New York Medico-historical Society (private); New York Ophthalmological Society (private); Lenox Medical and Surgical Society, New York (private); Boston Society for Medical Improvement; Gynæcological Society of Boston; Microscopical Club of the Buffalo Society of Natural Sciences (annual); Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private).

Tuesday, *May 12th:* North Carolina State Medical Society (first day—Winston); American Climatological Association (first day—Lakewood, N. J.); Association of Military Surgeons of the United States (first day—Philadelphia); New York Academy of Medicine (Section in Genito-urinary Surgery); New York Medical Union (private); Buffalo Academy of Medicine (Section in Medicine); Kings County, N. Y., Medical Association; Medical Societies of the Counties of Albany (annual), Delaware (annual), Greene (annual—Cairo), Onondaga (annual—Syracuse), Rensselaer, Seneca (annual), and Steuben (annual), N. Y.; Newark (private) and Trenton, N. J., Medical Associations; Clinical Society of the Elizabeth, N. J., General Hospital and Dispensary; Camden (annual—Camden), Morris (annual), and Sussex (annual), N. J., County Medical Societies; Norfolk, Mass., District Medical Society (Hyde Park—election); Franklin, Vt., Medical Association (annual); Northwestern Medical Society of Philadelphia; Practitioners' Club, Richmond, Ky.; Richmond, Va., Academy of Medicine and Surgery.

Wednesday, *May 13th:* Kansas Medical Society (first day—Topeka); North Carolina State Medical Society (second day); American Climatological Association (second day); Association of Military Surgeons of the United States (second day); New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Medical Societies of the Counties of Albany and Alleghany (annual), N. Y.; Pittsfield, Mass., Medical Association (private); Franklin, Mass., District Medical Society (annual—Greenfield); Hampshire, Mass., District Medical Society (annual—Northampton); Worcester, Mass., District Medical Society (annual—Worcester); Philadelphia County Medical Society.

Thursday, *May 14th:* American Laryngological Association (first day—Pittsburgh); Southern Illinois Medical Association (first day—East St. Louis); North Carolina State Med-

ical Society (third day); Association of Military Surgeons of the United States (third day); Kansas Medical Society (second day); Society of Medical Jurisprudence and State Medicine, New York; Brooklyn Pathological Society; Medical Society of the County of Cayuga (annual), N. Y.; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia.

Friday, *May 15th:* American Laryngological Association (second day); Southern Illinois Medical Association (second day); Kansas Medical Society (third day); New York Academy of Medicine (Section in Orthopædic Surgery); Brooklyn Medical Society; Baltimore Clinical Society; Chicago Gynæcological Society; St. Louis Academy of Medical and Surgical Sciences.

Saturday, *May 16th:* American Laryngological Association (third day); Clinical Society of the New York Post-graduate Medical School and Hospital; St. Louis Medical Society.

Births, Marriages, and Deaths.

Born.

Perry.—In Belington, West Virginia, on Saturday, May 2d, to Dr. and Mrs. O. L. Perry, a son.

Married.

Carter—Miller.—In New York, on Wednesday, April 29th, Dr. Curtis Braxton Carter and Miss Elizabeth Swasey Miller.

Garrett—Nicholls.—In New Orleans, on Wednesday, April 29th, Dr. Van Franklin Garrett, of Virginia, and Miss Harriet Nicholls.

Haskell—Munger.—In Boston, on Thursday, April 23d, Dr. Henry Hill Haskell and Miss Marian Louise Munger.

Jones—Gill.—In Memphis, Tennessee, on Wednesday, April 22d, Dr. R. Fleming Jones, of Houma, Louisiana, and Miss Elise Wheaton Gill.

Jordan—Washburn.—In Bridgewater, Massachusetts, on Tuesday, April 28th, Mr. Frank Jordan and Miss Helen C. Washburn, daughter of Dr. Christian Washburn.

Lewengood—Calman.—In New York, on Wednesday, April 29th, Dr. Samuel Lewengood and Miss Emmie Calman.

Mills—McKowen.—In Lindsay, Louisiana, on Wednesday, April 29th, Dr. T. L. Mills, Jr., and Miss Mary V. McKowen.

Pfeiffer—Kramer.—In New York, on Thursday, April 30th, Dr. Felix Pfeiffer and Miss Elizabeth Caroline Kramer.

Pinckard—Brown.—In Boston, on Wednesday, April 29th, Dr. Charles Philip Pinckard, of Chicago, and Miss Edith Augusta Brown.

Ruby—Osler.—In Manchester, Maryland, on Thursday, April 23d, Dr. John T. Ruby and Miss Nita Grace Osler.

Torek—Volkening.—In New York, on Wednesday, April 29th, Dr. Franz Torek and Miss Minnie Volkening.

Died.

Bisland.—In Natchez, Mississippi, on Sunday, April 26th, Dr. D. S. Bisland, in the sixty-eighth year of his age.

Blake.—In Northville, New York, on Monday, May 4th, Dr. J. F. Blake, aged seventy-five years.

Copeland.—In Middleboro, Massachusetts, on Wednesday, April 29th, Dr. George W. Copeland, aged fifty years.

Curtman.—In St. Louis, on Wednesday, April 22d, Dr. Charles O. Curtman.

Johnston.—In Baltimore, on Wednesday, April 29th, Banrey Stewart, wife of Dr. Samuel Johnston.

Letters to the Editor.

QUINOSOL AS AN ANTISEPTIC.

[translation.]

Berlin, *April 22, 1896.*

To the Editor of the New York Medical Journal:

Sir: In your No. 12 of the current volume, dated March 21st, you give abstracts from articles published by Ahlfeld and by Witte in opposition to my recommendation of quinosol as an antiseptic. I should not object to this if the heading of your article had not seemed to express a very decided partisanship against me and in favor of my opponents. To be sure, I am not familiar with the finer shades of expressions that are specifically American, and I do not find the word *craze*, employed in your heading as a substantive, in any dictionary of the English language, but its etymological relations lead me to suppose that it has a damaging meaning.

Under these circumstances, it is incumbent on me to defend before your readers my recommendation of the drug mentioned. In the first place, as to Witte's objections, which you cite in your article, they seem to me to miss the point entirely. In my publication I expressly said that I should not have concluded to recommend the preparation if I had not believed that a thorough trial as to its applicability in midwives' practice was in the highest degree desirable and, under the circumstances, in every way indicated ["zu einer Empfehlung des Präparates nicht entschlossen haben würde, wenn ich nicht glaubte, dass eine gründliche Prüfung auf seine Verwendbarkeit für die *Hebammen Praxis* in höchstem Masse wünschenswert und nach dem Vorausgeschickten durchaus indicirt sei"]. On the other hand, Witte's reference to corrosive sublimate as a tried agent can not be taken into consideration at all, for its employment by midwives is *forbidden by law* in Germany. As regards carbolic acid, it is true, we know its bright and its shady sides, but we know also that our midwives do not accomplish the desired purpose with this antiseptic. If they use solutions that are strong enough, they injure their hands so that their practice has to be interrupted; if on that account they employ weaker solutions—and this is what they actually do—they achieve no sterilization of their hands. This is known everywhere in Germany, and consequently the search carried on for an antiseptic that will answer the requirements of midwives' practice proceeds not from a vehement fascination, but from a conscientious conviction of the eminent importance to the lives of thousands of unhappy women that a really suitable agent would have.

That by my recommendation of quinosol I sought to discredit the use of soap and water and the employment of the nailbrush, is too laughable a supposition for me to feel called upon to contradict, and I pronounce nothing else concerning the mention of the physiological solution of common salt. For cases in which the physician or the midwife can reconcile it to his or her conscience to rest content with a physiological salt solution, of course, I did not recommend quinosol; the title of my article, Quinosol as an Antiseptic, shows that. So far as I know, nobody ever before made the assertion that a physiological salt solution was an antiseptic.

That anybody who is unprejudiced and has the necessary information can understand me is shown by Ahlfeld and Vahle's article, also expressly cited by you. These investigators in reality proved the efficiency of the agent for sterilizing the hands. Their results would [not?—we fancy our correspondent has omitted a *nicht*] have been against the drug if they had varied the duration of its action in their trials. They contented themselves throughout with an action of three minutes' duration, which is really too short to produce absolute sterilization. In the mean time, Ostermann's article, in the *Therapeutische Monatshefte* for March, 1896, gives information concerning a great number of similar trials in which a somewhat *longer* action of the agent produced the most excellent results.

As regards the toxicity of the drug, Ahlfeld's report speaks only *in favor* of quinosol, for, if a rabbit can receive a subcutaneous injection of three grammes without dying, a person can surely drink of a solution of the drug in the proportion of one to a thousand without being at all injured by it. I myself have bathed the abdominal cavity of the human subject with a one-to-two-thousand solution without observing any appearance of poisoning whatever.

I believe, therefore, that in spite of Ahlfeld and Witte's unfavorable decision a faithful trial of the drug may be urgently recommended to your readers.

PROF. DR. KOSSMANN.

*** Professor Kossmann is in error if he supposes that we had any animus against him or any prejudice against quinosol. We did, however, and still do deprecate what is properly called the craze for new antiseptics. Nevertheless, if quinosol is possessed of good qualities that do not belong to other drugs, by all means let it be installed in our armamentarium. The word *craze*, used as a noun, is not an Americanism or a provincialism of any sort. Webster defines it as "a strong habitual desire or passion." The *Century Dictionary* defines it as "an inordinate desire or longing; a mania." Both Webster and the *Century* quote the following from Wilson's *Genius and Character of Burns:* "It was quite a *craze* with him [Burns] to have his Jean dressed genteelly." The [English] Philological Society's *New English Dictionary on Historical Principles*, edited by Murray, volume ii, Oxford and New York, 1893, defines it as "an insane or irrational fancy; a mania," and gives this sentence from De Quincey's *Autobiographic Sketches:* "I had a perfect craze for being despised." The *Standard Dictionary* quotes the following from De Quincey: "Shelley's feud with Christianity was a *craze* derived from some early wrench of his understanding."

Professor Kossmann draws an inference from the statement that a rabbit survived a subcutaneous injection of three *grammes* of quinosol. In our article we said three *grains*. Our readers will bear in mind that three grammes would amount to a little more than forty-five grains.

BALSAM OF PERU IN THE TREATMENT OF SCABIES.

NORWICH, N. Y., *May 4, 1896.*

To the Editor of the New York Medical Journal:

SIR: In the last issue of your valued journal, page 600, I noticed an article entitled Balsam of Peru in the Treatment of Scabies, which relates the experience of M. Jullien and M. Descouleurs as it appeared in a recent issue of the *Presse médicale.* Having used this remedy almost exclusively in the milder form of scabies for several years, I am convinced of its efficacy and superiority, but am constrained to protest against its novelty. I do not remember where I first learned of such a treatment, but I find that in Raphael's translation of the eighth German edition of Vogel on *Diseases of Children*, the preface of which is dated January, 1884, and signed Alfred Vogel, Dorpat, Russia, the author speaks of its use as follows: "The sovereign remedy for the cure of scabies and which has cast all others in the shade, is balsam of Peru. . . . The only objection to its use is that the clothes become badly stained, and notwithstanding repeated washings remain discolored for a long time; hence the necessity of using old and worn-out articles. In children under five years of age I use this remedy only; in older children, who have only a few pustules, the usual solution, solutio Vlemingkx (a lotion of sulphur and lime), may be used like the balsam. With these two remedies thus applied any case of scabies can be cured in three or four days."

R. A. THOMPSON, M. D.

Proceedings of Societies.

AMERICAN MEDICAL ASSOCIATION.

Forty-seventh Annual Meeting, held in Atlanta, Ga., on Tuesday, Wednesday, Thursday, and Friday, May 5, 6, 7, and 8, 1896.

The President, Dr. BEVERLY COLE, of San Francisco, in the Chair.

Addresses of Welcome were delivered by Dr. FRANK M. RIDLEY and the Hon. JOHN TEMPLE GRAVES.

The President's Address.—The PRESIDENT stated that fifteen years ago he had been made first vice-president of the association, when Dr. Lewis A. Sayre was president.

Regarding the American Medical College Association, the president said it had within the past two years brought about great and most desirable changes. It must be admitted that improvement had been effected, but very slowly, and the practice of many schools in evading the rules established by the association was so general that the good which resulted was small, and the manifest reluctance of so many now within the organization to accept the last advance—namely, the adoption of the four-years'-course requirement—gave but little promise for the future.

Just so long as the examinations for matriculations were conducted by members of the faculties of medical schools, evils would continue, and so long as the professional examinations for degrees were conducted by interested persons, the ranks of the noblest profession would be filled with uneducated, untrained so-called doctors.

Relative to making examinations for life insurance companies, he said that no man qualified to make a thorough examination, such as was required by insurance companies, if he was properly conscious of the value and importance of his services, would or could assume the responsibility attaching to his function as an examiner without an adequate return. Surely the fee of five dollars was small enough, and the offer of any smaller sum was simply an insult to an educated physician and a bid for such cheap and unscientific service as could be obtained from the ranks of the unskilled and the irresponsible.

Let every examiner plant his foot and decline employment without adequate compensation; let it be published to the world that certain companies employed incompetent men, or, paying cut fees, received cut services, and very soon they would discover their mistake and be brought to a realization

that the best and most skillful services commanded the best prices.

Another question of grave importance, and one of which he thought the association should take cognizance and suggest a remedy, was the total absence of reciprocity between the United States and foreign countries as to laws governing the right to practise medicine. Why Americans should be required, when taking up their abode in Germany, Great Britain, or even the territory of our first cousin, Canada, to undergo an examination before they could secure a license, while our portals were flood-gates through which every country on earth poured its surplus of medical men, or rather, to put it more correctly, why our country should receive with open arms, without hindrance, the excess of the products of foreign schools without requiring of them the same as was required of us, he could see no reason, and he was distinctly of opinion that the time had arrived when it should be attended to and something done to arrest the strides of this rapidly growing wrong.

The profession advanced by Dr. Cyrus Edson of having discovered a cure for tuberculosis in what he styled *aseptolin* was one that naturally had attracted attention and should be thoroughly tested. Let us hope for better results than had been obtained from Koch's tuberculin. It was to be regretted that men of character and well-known scientific attainments and honesty of purpose should allow descriptions of what seemed to them to be valuable to find their way into the secular press, to be discussed by unscientific minds before they had been thoroughly experimented with by the authors or by others capable of instituting and observing results of properly conducted tests. He had noticed with inexpressible pleasure the action taken by the association at its last meeting, together with its hearty support at the hands of the State society of Pennsylvania, so far as the advertising columns of the association's *Journal* were concerned. In this case reform had begun at home, and the president said we should carry it further and apply it to individuals.

Equally gratifying was the effort now being made to induce Congress to provide for an additional member of the cabinet, who should be known as secretary of public health and should be the head of a department to be known as the bureau of health, which should have general charge of health matters as well as statistics. Such a department would be of incalculable utility and value, and the measure should by all means possible be vigorously pushed forward.

While the year just passed had been marked by several important discoveries of scientific value, the usual advances in medicine and surgery had been made, but he feared that the tendency to push surgery forward to the exclusion or neglect of medicine was becoming glaringly conspicuous.

It would seem that every tyro imagined that surgery offered the quickest route to success, and fame was to be attained only through blood; hence every case the symptoms of which pertained to McBurney's point was necessarily a case of appendicitis, for which the only sovereign remedy was the knife; or, if the patient was a woman and her suffering was referred to the ovarian region, or she had a fibroma, very small and barren of symptoms of importance, not only must she be subjected to cœliotomy at once, but in nine cases out of ten her uterus, or uterus and ovaries, sacrificed, thus unsexing her without the slightest effort being made to spare these organs and preserve to the woman her distinguishing function.

If the analogous practice prevailed of emasculating every man who might have a neurosis of the cord and neighboring organs there would be fewer operations than are now done on women for no greater cause. The fact that improvements and advancements in surgical procedures had made them relatively safe should not be advanced as an argument, and he looked with suspicion upon him who might maintain that, as no use could be assigned to the appendix vermiformis, it should upon the slightest provocation or excuse be removed. Was it not time that a halt should be called and such cases be assigned to those who were expert in diagnosis as well as in surgical procedures? Could any law of either God or man be found to justify oophorectomy or hysterectomy except under the most dire conditions?

After the address the privileges of the floor were given to visiting delegates from other bodies.

A Memorial from the Medical Association of the District of Columbia was introduced, appealing for an expression of opinion by the American Medical Association on the subject of vivisection, and, on motion, a committee was appointed to report on the memorial.

The Second Pan-American Medical Congress.—Dr. Charles A. L. Reed, of Cincinnati, introduced a resolution which provided for the appointment of delegates to the second Pan-American Medical Congress, which was to be held under the auspices of the Mexican government. The resolution was adopted.

The Question of Meeting in Philadelphia.—A preamble and resolutions from the Philadelphia County Medical Society were read, asking that the next meeting of the association be held in that city. The resolutions were referred to the committee on nominations.

On motion of Dr. Holton, of Vermont, a committee of five was appointed to consider the recommendations of the president's address.

The president appointed on a committee to consider the subject of vivisection Dr. Senn, Dr. Gaston, Dr. Osler, Dr. Gould, and Dr. Park.

(*To be continued.*)

Reports on the Progress of Medicine.

OPHTHALMOLOGY.

By CHARLES STEDMAN BULL, M.D.

Treatment of Simple Glaucoma by Multiplied and Repeated Sclerotomies.—Galezowski (*Rec. d'ophthal.*, December, 1894) claims to have shown that repeated sclerotomies in simple chronic glaucoma not only arrest the progress of the disease but improve the visual acuity very often. But sometimes relapses and aggravations of the disease occur, and he has become convinced that the sclerotomies must be again and again repeated. Quadruple sclerotomies have been followed by complete success if they are repeated two or three times in the course of the disease. He considers that the mechanism of hæmorrhagic glaucoma is the same as that of other varieties of glaucoma, but with predominance of arterial sclerosis of retina and chorioid, with venous stasis and obliteration of the canal of Schlemm. He recommends sclerotomy for this form of glaucoma, and reports excellent results.

The Anterior Outflow Channels of the Eye and the Artificial Production of Glaucoma.—Knies (*Arch. of Ophthal.*, xxiv, 2) gives the following as the positive facts resulting from his experiments with respect to the conditions of outflow in the anterior segment of the eye:

1. The aqueous is secreted not only by the ciliary processes, but to a slighter extent also by the posterior segment of the eye.

2. The outflow from the anterior chamber takes place not only from Fontana's space, but also through the cornea itself, and flows in the direction of the subconjunctival tissue.

3. Dissolved substances present in the anterior portion of the vitreous also get into the lens.

The object Knies had in making his experiments was to demonstrate the passages of outflow from the vitreous and aqueous by means of the changes which substances capable of provoking irritation and inflammation excite in their passage through the walls of the eyeball.

The first visible effects of the injections were processes of coagulation. If the transudate coagulates spontaneously, the channels of outflow are blocked up and an attack of glaucoma was produced. The irritant action is manifested very soon also in the immediate neighborhood of the injected matter, and this latter therefore becomes encapsulated in a coagulation membrane.

If we call glaucoma simplex what it really is—namely, optic-nerve atrophy with excavation—and call the true forms of glaucoma iridocyclitis anterior, an inflammation which may occur in every possible degree of acuity and intensity, we then have designations in which the clinical symptoms and the anatomical conditions are strictly correlative.

So-called Muscular Unbalance and its Treatment.—Gould (*Ann. of Ophthal. and Otol.*, iv, 3) considers that the treatment of muscular anomalies should depend on two things: 1. On the existence of symptoms ascribable to the dynamic strain, such as pain, asthenopia, etc. 2. On the thorough trial of the correction of the refractive error, for these errors are the vastly preponderant source of eye-strain.

With proper correction of the ametropia, esophoria, as a rule, ceases to become troublesome, or is gradually cured. As regards hyperphoria, a similar result usually follows the use of correct glasses, and this result is hastened by prism gymnastics. When the hyperphoria is high, he corrects only a part of it by prisms, leaving an unreached ideal toward which the nervous mechanism should strive.

In all cases of exophoria the essence of the matter is to increase the adduction power. The proper way to do this is to carry the adduction power so high and fix it there by continued gymnastics so permanently that the treatment may be discontinued. The fundamental principle underlying these non-operative gymnastic therapeutics of muscular unbalances is the conception of the eye as a living, self-healing, marvelously delicate dynamic mechanism. Our single aim is to provide helps, so that it may do its labor physiologically.

Strabismus Theories.—Hansen-Grut (*Arch. of Ophthal.*, xxiv, 1) thinks that the convergent position is not anatomical but functional. It is the beginning of the squint, not the cause. The existence of the position previous to the squint can not be proved, but only suspected, from experience in certain cases of asthenopia. He believes divergent strabismus presupposes a divergent anatomical position of rest. If this is present the eyes pass into it when the innervation of convergence ceases. In convergent strabismus we have to deal not only with an active innervation of the internus but of all the ocular muscles. The eye is turned outward by the actively innervated externus after dividing the internus. In divergent squint, on the contrary, which depends on complete relaxation of the convergence innervation, the action of dividing an externus is relatively slight, because the antagonist, the internus, is not innervated at all. And it is in this difference between the action of tenotomy of an externus and of an internus that he finds support for his innervation theory of strabismus.

The Results of the Operation for Strabismus.—Schweigger (*Arch. of Ophthal.*, xxiv, 1) prefers to measure the angular deviation rather than the prismatic, because he thus obtains results which sufficiently express the correction of the visual angle. In twenty-five cases of simple tenotomy of the internus in convergent squint, with normal binocular vision, the direct result was poor, averaging eight degrees. The final result was satisfactory in only three cases out of ten. He does not believe that cicatrization has much to do with failures. He regards dimness of vision, whether congenital or not, as one of the causes of permanent as well as periodic squint, and yet in a majority of cases periodic squint is removed by simple tenotomy.

Schweigger has done double tenotomy of the interni in only a few cases where the deviation has been measured by prisms. The result was either nothing or very slight, despite free subconjunctival dissection. He thinks he can count on equalizing a deviation of five millimetres. The direct result does not always correspond with the final, for an originally satisfactory position may retrograde into convergence, or a moderate convergence may decrease, or a slight divergence may disappear. The great variations obtained from simple tenotomy prove that the tenotomy alone is not decisive, but that the strength of the antagonist affects the result. The lack of mobility of the externus does not necessarily mean actual loss of power, as the condition may be due to want of exercise. Hence, gymnastic exercise of the muscles by alternately turning the eyes to the right and left is a useful preliminary to the operation for squint.

When the deviation is more than five or six millimetres, double tenotomy is not enough, and advancement is needed. In cases of divergence, Schweigger never does tenotomy of the externus, unless the facultative divergence is greater than the normal, for fear of producing an artificial convergent squint. Those cases in which the deviation can be measured with a prism pass without defined limits into those in which binocular vision is lost. The results of simple tenotomy are about the same as in the former class. The immediate result is greater than the final.

In insufficiency of the interni in divergence the relief afforded by advancing the internus alone, without tenotomy of the externus, is generally transitory. In advancing a muscle, it is extremely necessary to secure the muscle before we loosen its tendon from the sclera, for if we divide it before securing it, it withdraws of its own elasticity, and it is then extremely difficult to secure it with the forceps in order to apply the sutures properly. The widespread view that any advancement can at once put the eye in a position which it shall permanently maintain, rests on false premises.

In the best sense of the word, squint is only cured with the restoration of normal conditions, including binocular vision. Diplopia, as is known, is rare in squint, the fact being explained by suppression of the retinal image. Binocular vision in squint is perfectly explained from an empirical point of view. Binocular fixation has an anatomical foundation, for the fovea centralis is the best portion of the retina, and hence should be used for fixation. If this has once become a habit, retinal identity develops itself. But if binocular vision is acquired, it can be forgotten, especially when it has only for a short time been acquired.

A New Method of tying the Sutures in Advancement of the Ocular Muscles.—Black (*Arch. of Ophthal.*, xxiv, 3) recommends the following method: Thread a full-curved

needle with No. 3 silk, bring the ends of the thread together and tie in a small, hard knot; or pass both ends of the thread through the eye of the needle at the same time, leaving the end of the suture in the form of a loop instead of a knot. The needle is then passed through the conjunctiva, taking a good bite in the sclera close to the cornea. After the thread is pulled halfway through, the needle is passed through between the threads on the other side of its entrance into the sclera, and then drawn home. A similar suture is fixed in the same manner on the opposite side of the cornea. The belly of the muscle is then seized with the forceps through the conjunctiva; with scissors the conjunctiva is snipped through both above and below the muscle. A tenotomy hook is then passed beneath the muscle, and the conjunctiva and submuscular tissue cut horizontally toward the cornea, and then toward the external canthus, and the belly of the muscle thoroughly freed from the globe. The sutures are then passed through the belly of the muscle from below upward as far back as is necessary, and the sutures pulled halfway home. The muscle is next cut off just in front of the entrance of the sutures. The sutures are then pulled home, and both grasped between thumb and finger, and the globe is fixed with forceps on the nasal side of the cornea and turned outward, while the muscle is advanced to the desired position. The sutures are then tied in a surgeon's knot over the muscle.

An Operation for the Advancement of a Rectus Muscle.—Fergus (*Ophth. Rev.*, June, 1895) recommends the following operation: Two horizontal incisions are made in the conjunctiva, corresponding with the upper and lower edges of the muscle and extending nearly from the cornea to the canthus. An ordinary strabismus hook is passed beneath the muscle and moved backward and forward, so as to free it from all loose attachments to the underlying sclerotic. Two sutures are employed, each provided with a fine curved needle. One is passed from the upper incision through the centre of the flap containing the muscle and conjunctiva; the other is passed in a similar way from the lower incision through the same part of the muscle as the first. One thread is then tied in a firm reef knot, so as to include half the muscle and conjunctiva of the flap, and the other thread is similarly tied, so as to include the other half. The muscle is then divided just in front of the knots, and as much of the flap as is thought desirable is dissected off between the point at which the muscle is divided and the cornea. One needle is then passed through the tendinous insertion and is carried upward beneath the conjunctiva and brought out nearly above the vertical meridian of the cornea; the other needle is passed in a similar manner, and brought out nearly below the vertical meridian of the cornea. The ends of the upper thread are then crossed, drawn tight, and tied in a firm reef knot, and the lower thread is tied in the same way.

A New Operation for the Advancement of the Recti Muscles.—Prentice (*Ann. of Ophthal. and Otol.*, iv, 2) describes here a new operation for advancing the recti muscles by tying them by means of ligature plates. These plates are made of aluminum, three millimetres wide and from four to twelve millimetres long. They are spherically curved, so as to fit the contour of the eye, their curvatures being of varying diameters. They are slightly notched at each end, with a groove running their entire length on the convex surface, into which the ligature falls. An incision is made through the conjunctiva and capsule of Tenon in the axis of the muscle, beginning at its scleral attachment and extending along the middle line as far as may be necessary. The muscle should then be freed from all capsular and ocular attachments. A Stevens hook is then passed behind the muscle and traction made toward the cornea. Another hook is then passed behind the muscle from the opposite side, and traction made in the opposite direction at the same time. A small curved needle, carrying one end of a ligature, is introduced into one margin of the muscle, as far back from its scleral attachment as is necessary, passed as nearly as possible transversely through its fibres, and brought out on the opposite margin of the muscle. This offers a greater support to the ligature. Each end of the ligature, on its respective side, is then passed from the under side through the margin of the muscle close to its scleral attachment. After both ends of the ligature have been thus disposed, the hooks are taken out. Each end of the ligature, on its respective side, is now brought through the conjunctiva from its under side at a point about four millimetres in the direction of the cornea from the scleral attachment of the muscle, the distance between the ends being determined by the width of the scleral attachment. The two ends of the ligature are then to be tied by a surgeon's knot, without much drawing forward of the muscle at first. Two strabismus hooks may now be used to induce traction in opposite directions. The proper size ligature plate is then seized by forceps, and one of its notched ends is made to engage one side of the ligature. Strong traction is now made on the opposite side of the ligature, so as to slip it over into the notch at the other end of the ligature plate. The forceps and hook are then removed, and the ligature and knot fall into the groove on the ligature plate. If the amount of advancement made is not sufficient, a longer ligature plate may be inserted.

When the tendon has not been divided, the muscle is tucked or folded upon itself, and the inflammatory action that follows fastens it in this position.

The Pathological Anatomy and Pathogenesis of the So-called Choked Disc.—Elschnig (*Arch. f. Ophthal.*, xli, 2) concludes that the choked disc met with in brain tumors is an inflammation of the papilla with excessive œdema. It is always accompanied by inflammatory changes in the optic nerve and its sheaths, and often by similar changes in the retina and chorioid. That it proceeds from a simple inflammation of the head of the optic nerve, and that the latter probably results from an extension of the inflammation in the vascular portions of the optic nerve.

Optic Neuritis consecutive to Ozæna.—Sulzer (*Ann. d'oc.*, January, 1895) reports two cases. The clinical and ophthalmoscopic symptoms were characteristic and almost identical. The defect in the visual field involved the lower half, and appeared to the patients like a mist or fog. The eyes tired very easily, and when fatigued the scotomata increased in size. There was a papillitis of the upper halves of the optic discs. Sulzer could not decide whether the neuritis was due to a propagation of the infectious process by means of blood-vessels and lymphatics, or to a toxic action from a distance, as in the post-diphtheritic paralyses from Loeffler's bacillus.

Permanent Central Scotoma caused by looking at the Sun during an Eclipse, and complicated by Uniocular, Transient, Revolving Hemianopsia.—Duane (*Arch. of Ophthal.*, xxiv, 1) reports the case of a man, aged twenty-four, who twelve years before had, on the occasion of the transit of Venus, looked directly at the sun through a tube. Soon after, he found that when both eyes were open, but not when the left eye was closed, a greenish cloud hid completely the centre of every object looked at. This cloud was a circle with a crescentic defect at the upper part. Since the date of the transit he had also been subject to attacks in which the entire lower half of the field of vision of the right eye was

blotted out. In the course of ten or fifteen minutes the obscuration shifts its place so as to occupy successively the temporal, superior, and nasal half of the visual field, and then disappears, being succeeded by a dull, fronto-temporal, left-sided headache, lasting for about twelve hours. The ophthalmoscope gave a negative result.

A Case of Bilateral Abducens Paralysis after Diphtheria.—Heintz (*Ctrlbl. f. prakt. Aug.*, February, 1895) reports a case of this sort in a child, aged seven. Three weeks after the diphtheritic attack began, a specialist found extensive paralysis of the soft palate, which recovered after two weeks of electrical treatment. About seven weeks after the commencement of the diphtheritic attack, and when the child was apparently perfectly well, diplopia suddenly appeared, with convergent squint, unsteady gait, and vertigo. An examination showed a paresis of both external recti. The visual acuity was good, and there was no other ocular disturbance, the accommodation and pupillary reaction being normal.

Traumatic Paralysis of the Abducens Nerve.—Purtscher (*Arch. of Ophthal.*, xxiii, 4) draws the following conclusions from his observations: Traumatic paralyses of the ocular muscles are not of very frequent occurrence in comparison with the frequency of head injuries. The relative frequency of bilateral traumatic paralysis of the abducens is very remarkable; in forty-six cases, 28·3 per cent. were bilateral. This may be explained by the fact that a traumatism acts locally more severely than other causes, while affecting a larger area. We should expect to find bilateral paralyses when a force acts symmetrically upon both halves of the head, as in crushing of the skull, or in those cases in which the force acts directly from above or below. Bilateral paralysis is most easily produced when the direction is transverse, the body of the sphenoid bone thus receiving one or two fractures. In nine of the twelve cases of unilateral paralysis of the abducens in which the direction of the force was certainly lateral, the affection occurred on the side of the head upon which the injury was received. Since paralysis of the abducens and fracture of the petrous bone bear such close relations to each other, we might conclude that the lesion of the acoustic is also likely to be found on the side receiving the injury. We should emphasize the relative frequency of primary paralysis, or at least of the final persistence of isolated, intracranial paralysis of the abducens, without paralysis of other cranial nerves, and without other cerebral symptoms. Intense contraction of the antagonistic muscle develops with remarkable rapidity in those cases in which the paralysis is not transient, but persists for some time, though this may not be a typical symptom of traumatic paralysis of the ocular muscles.

Diseases of the Eye Dependent upon Influenza.—Pooley (*Amer. Jour. of Ophthal.*, May, 1895) summarizes his conclusions as follows:

1. The eye complications following grippe are comparatively rare.

2. Many of the cases reported as due to the grippe need more proof.

3. Grippe may affect the eye by inflammatory process or by invasion of the secondary sinuses.

4. It may affect the nervous tissues.

5. The inflammatory affections involve especially the conjunctiva, the uveal tract, tissues of the orbit, and the capsule of Tenon.

6. In some of these cases the extension is by continuity and in others by metastatic or embolic processes.

7. The nervous apparatus of the eye is especially liable to become involved by paresis of accommodation or of the extrinsic muscles, of the cervical sympathetic, by papillitis and retrobulbar neuritis, and anæsthesia of the cornea.

Is the Physiognomy of the Fundus Oculi in Epilepsy Characteristic?—Reber (*Ann. of Ophth. and Otol.*, iv, 2) notes the following observations of his studies of eyes of epileptics:

1. In a number of cases the optic disc was superficially over-capillary, and in its deeper layers grayish.

2. In quite a number of instances the scleral ring was sharply cut, especially on the temporal side.

3. In many instances the retinal lymph channels were distended and visible as glistening milky opacities, occasionally along the vessels, but most frequently at the vessel entrance.

4. In numerous cases the fibre layer of the retina was thickened.

5. In a number of instances the arteries were slightly wavy.

6. In several instances the vessels on the disc were tortuous.

7. In several cases the veins were tortuous.

8. In a few cases the veins pulsated.

9. In a few cases the macular arterial twigs were tortuous.

10. In a few instances the chorioid in the macular region was granular.

Remarks on the Field of Vision in Certain Cases of "Neglected Eyes."—De Schweinitz (*Ann. of Ophth. and Otol.*, iv, 3) relates cases divided into three groups. Group I consists of cases in which the visual field for form and color is normal or nearly so, and in which the accuracy of color perception at the macula, or between it and the fixing point, is unaffected. Group II consists of cases characterized, first, by contraction of one or more of the color fields, the field for form remaining normal; and second, by irregular contraction of both form and color fields, sometimes associated with reversal of the red and blue lines. Group III consists of cases with or without concentric contraction of the fields for form and color, but associated, first, with diminished central color perception, either at the point of fixation and surrounding it, or between it and the blind spot; or second, with scotoma, chiefly for colors.

The cases with normal visual fields and good color perception seem capable of acquiring increased visual acuity.

In the cases with marked abnormities in the visual fields, particularly in the form of areas of diminished color perception, or color scotomata, there are visible changes in the discs. Visual acuity in these cases did not improve.

In some cases of Group III the abnormity of the visual field is analogous to that seen in hysteria, neurasthenia, and allied conditions usually associated with retinal fatigue.

Ocular Manifestations of Vanillism.—Guérin (*Ann. d'oc.*, October, 1895) here calls attention to the symptoms occurring in the eyes of patients who are suffering from the constitutional effects of vanilla poisoning. These are superficial erosions and excoriations of the lids and conjunctiva, caused by coming in actual contact with the corrosive oil of vanilla during its manufacture. Besides these superficial troubles, the patients complain of a tension in the eyeball, a sense of weight followed by severe pain with circumorbital radiation. This condition is soon complicated by a progressive failure of vision, which may end in total amaurosis. The ophthalmoscope merely shows a congested papilla. These symptoms resemble those met with in glaucoma.

Case of Acromegaly with Ocular Complications.—Benson (*Amer. Jour. of Ophth.*, October, 1895) reports a case of a man, aged thirty-eight years, who after an injury to his leg

nine years before began to grow lazy, sleepy, and big; the sight had been affected for two or three years. There was no diathesis, either hereditary or acquired. He was a heavy smoker, had a central scotoma for colors, and a bitemporal color defect. Vision was $\frac{6}{6}$ in each eye. After giving up smoking and taking iodide of potassium, vision was restored to normal and remained good for two years. He then resumed smoking and in two months vision was reduced to $\frac{5}{60}$. At this time he presented the characteristic appearances of acromegaly, and there was irregular bitemporal hemianopsia. Thyreoid extract tabloids were ordered, but the next day vision was reduced to perception of light. Fresh thyreoid extract was given, and within seven weeks the vision became normal, he diminished in weight, and the visual field improved.

Pseudo-malignant Tumors of the Orbit.—Panas (*Amer. Jour. of Ophth.*, November, 1895) draws the following conclusions from his observations:

1. In the presence of a tumor of the orbit reputed sarcomatous, even if enlightened by the histological examination, we must think of the infectious origin, and not have recourse to any operation until previous treatment has proved useless.

2. Among the means of treatment we possess, we must include mercury, iodine, arsenic, and toxitherapy with erysipelas or the pure cultures of streptococci. The streptococci serum is less dangerous, and its toxicity can be increased by the addition in the cultures of the *Micrococcus prodigiosus*.

3. The research for the point of origin of the infection, and the bacteriological determination of the toxines which are the cause, aid in confirming the diagnosis, and enable us to lay down rules for a rational medical treatment. Only after this has been done should we have recourse to surgical interference, which is often powerless in the so-called sarcomata and lymphadenomata of the orbit.

Certain Subjective Visual Sensations.—Lehender (*Kl. Mon. f. Aug.*, November, 1895) draws the following conclusions from his series of five articles:

1. The blood current in one's own eye is easily perceptible without the aid of any artificial means, even the pressure of the finger on the eyeball.

2. The blood current visible in one's eye is not in the retinal capillaries, but in those of the chorioid.

3. The current is not regular, but varies from a steady rapid current through all the stages to positive stasis.

4. No movement synchronous with cardiac action or respiration has been observed.

5. The vascular walls are never visible during the occurrence of this phenomenon.

6. The bright spots, which by close attention can be seen both day and night, are to be regarded as the expression of Pflüger's so-called "explosion of the cells."

7. Objective light acts primarily and photochemically on the pigment, and secondarily on the rods and cones, and similar changes are induced by the blood current.

8. The pigment granules and their movements are equally visible in one's eye under favorable conditions.

9. From the movement and changeable arrangement of the pigment granules there sometimes result remarkably regular polygonal figures. These figures, which are images of retro-retinal things, probably resemble the vision of animals provided with faceted eyes.

Observations of Cases of Hemichromatopsia, indicating the Non-existence of a Separate Cortical Color Centre.—Holden (*Arch. of Ophthal.*, xxiv, 4) thinks that in cases of bitemporal or incomplete homonymous hemianopsia for white, the eyes are also unable to distinguish from white the black dots and gray patches which are not seen by the normal eye in parts of the field in which the corresponding colors are not recognized. A slight interference in conduction of any of the fibres of the visual tract leads to an inability to recognize green or even red, or to distinguish slight differences in luminous intensity. A more marked disturbance in conduction leads to the inability to recognize blue, or to distinguish quite marked differences in luminous intensity. A greater interference with conduction prevents the distinguishing of white from black, and with complete interference with conduction even perception of light is lost. Thus the recognition of color varies with the light sense, and the assumption of an involvement of a particular cortical color centre in case of hemichromatopsia is not only unnecessary, but is palpably erroneous.

The Coincidence of Heteronymous Temporal Hemianopsia with Diabetes Insipidus.—Spanbok and Steinhaus (*Rec. d'ophthal.*, April, 1895) refer to the fact that heteronymous temporal hemianopsia is the result of a lesion or compression of the anterior or posterior angle or of the median line of the chiasm, and that in diabetes insipidus the lesion is located in the floor of the fourth ventricle, between the nuclei of the auditory and pneumogastric nerves. They report a single case of a woman, aged fifty-three, who became syphilitic at the age of nineteen, and aborted with her first child. One year later she was delivered of a stillborn child. She subsequently had four healthy children. Having always been stout, she subsequently began to grow thin and developed great thirst. Gradually her sight failed in both eyes, and when examined there was found a bilateral heteronymous hemianopsia. The color sense was normal at the centre of vision. The authors think that both the diabetes insipidus and the hemianopsia were caused by circumscribed syphilitic lesions, one located in the floor of the fourth ventricle and the other in the chiasm. Antisyphilitic treatment was instituted and within two months the vision and field became normal, the urine was reduced to the normal quantity, and the patient was completely restored to health.

Remarks on Nasal Hemianopsia.—Rakowicz (*Kl. Mon. f. Aug.*, December, 1895) thinks that owing to the partial decussation of the optic nerve fibres in the chiasm it is possible that pathological processes in the tracts or in the visual centres may produce a right or left hemianopsia, according to their situation. A temporal hemianopsia may also be easily explained by a lesion of the chiasm in the median line, or by a lesion of the anterior or posterior angle of the chiasm, where merely crossed fibres are found. But it is difficult or impossible to understand how a nasal hemianopsia may be deduced from any anatomical relations in the chiasm. A nasal hemianopsia means a disturbance of vision dependent on a lesion of the uncrossed fibres corresponding to the temporal halves of the retinæ. But where do these uncrossed fibres lie so isolated from the crossed fibres that pathological processes only attack the first? Usually the cause of a nasal hemianopsia is attributed to simultaneous disease of both lateral angles of the chiasm. But Henschen holds that pathological processes in the lateral angles of the chiasm can not cause a nasal hemianopsia, because such processes would involve both the crossed and uncrossed fibres.

Erythropsia.—Fuchs (*Ophth. Rev.*, August, 1895) believes that any normal eye can acquire red vision if dazzled sufficiently by snow. The ease with which the erythropsia can be produced varies in different individuals, many factors, among which the amount of pigment in the eye is perhaps the chief, tending to influence the result. Erythropsia is a very transitory phenomenon, but if it has once been produced

and has passed away after a few minutes, a short exposure to the snow will cause its reproduction. For persons who acquire erythropsia with difficulty a certain height above the level of the sea is an important factor in its production. Its production is facilitated by dilatation of the pupil and still more by absence of the lens. That the erythropsia has its origin in the retina is proved by the fact that if only one eye be exposed to the dazzling the erythropsia limits itself to this eye. Fuchs explains the occurrence of the erythropsia by the supposition that the retinal purple becomes visible. This is usually not perceived because it is always present in the retina. By long exposure to strong light, however, the retinal purple is bleached and the retina becomes uncolored. If the patient then passes into a dark room, the purple begins to regenerate and becomes visible.

Observations and Experiments on the Pathology of Graves's Disease.—Edmunds (*Trans. London Path. Soc.*, 1895) suggests that in cases of Graves's disease in which the exophthalmia is so great as to cause ulceration of the cornea, division of the sympathetic nerve should be tried, either alone or in connection with the stitching of the lids together. As regards the pathology of the disease, Edmunds mentions two hypotheses. One is that the goitre is the primary affection, and the other is that the disease is due to a lesion or functional disturbance of some part of the central nervous system causing irritation of the sympathetic. In favor of the first view are (1) the very similar action of a drug—cocaine—and (2) the good effects often produced by the excision of a portion of the goitre in Graves's disease. In favor of the second hypothesis are the following facts: 1. Graves's disease is not more common in goitrous districts than elsewhere. 2. It closely resembles the effects of emotion. 3. Emotion sometimes causes all the symptoms, which are not permanent, but pass off in a few days. 4. Emotion is a cause predisposing to the disease. 5. Graves's disease has some connection with diabetes, for it is sometimes preceded, accompanied, or followed by diabetes. 6. Thyreoid feeding does not cause exophthalmia in the healthy, nor does it make the subjects of Graves's disease worse.

The Alleged Action of the Oblique Muscles in Oblique Astigmatism.—Hotz (*Ann. of Ophth. and Otol.*, iv, 2) discusses Savage's theory in the following manner: Why should in oblique astigmatism a horizontal line not form a horizontal image on the retina? The refraction of the eye affects only the sharpness of the retinal image, but not its location. The location on the retina of the image of a luminous point is determined by what Helmholtz called the direction ray, which forms a straight line drawn from the object point through the nodal point of the eye to the retina; where this direction ray touches the retina, there the image of its object point is formed. If the object looked at is a horizontal line, the direction rays connecting all its luminous points with the nodal point pass through the horizontal meridian of the cornea, and, as this meridian has a regular curvature in oblique astigmatism, these rays proceed undeflected in their horizontal plane through the nodal point to the retina, and form upon the latter a horizontal line.

It is therefore evident that neither experiments, nor clinical observations, nor the laws of physiological optics sustain the doctrine of the obliquity of the retinal images and the necessity of any action of the oblique muscles in oblique astigmatism. The theory rests on false premises and is wholly untenable.

The Operative Treatment of Myopia.—Von Hippel (*Trans. of the Twenty-fourth German Ophthal. Congress; Arch. of Ophth.*, xxiv, 4) has operated on sixty cases of high myopia. At first only young patients were operated on, but finally patients up to fifty-five years of age. The sclerosing process in the lens does not occur in myopic eyes. The indication for the operation must not depend on the number of dioptres of myopia. In children the operation was performed from ten dioptries upward. About twenty cases showed foci of chorioiditis or retinal hæmorrhages, in which the operation turned out favorably. In order to obtain binocular vision, the operation is required on both eyes. In one case iritis resulted. One eye was lost by croupous conjunctivitis. Detachment of the retina was never observed after the operation. Vision was improved from four to ten fold.

The Pathogenesis of Myopia.—Bitzos (*Ann. d'oc.*, October, 1895) considers that two factors exist in the production of myopia—a very great elasticity of the sclerotic, and an increase of the intraocular tension. These two factors must exist and act simultaneously. Everything which contributes to diminish the resistance of the sclerotic, such as serious morbid changes and all debilitating causes, and everything which aids in increasing the efforts of accommodation, contributes to the development of myopia. To prevent myopia, one or both of these factors must be removed; and this, in the midst of our modern civilization, can not be entirely accomplished in the case of either of these factors. Modern education makes unreasonable demands upon the eyes of the youth of large cities, in the midst of unfavorable or unhygienic surroundings. The educational demands should be much simplified, and this would be an immense advantage not only for the health of the child, but for his intellectual development.

Hypermetropia of High Degree.—Zimmermann (*Ann. of Ophth. and Otol.*, iv, 2) draws the following conclusions from his observations: 1. Hypermetropia of high degree is always congenital and without tendency to increase. In children a decrease may be expected. 2. It presents no characteristic lesion of the chorioid, retina, or media. 3. Astigmatism is present in about fifty per cent. of the cases. 4. The severity of the asthenopia bears no close relation to the degree of the defect. 5. The principal complication is convergent squint. 6. The influence of heredity is not clearly defined. 7. Early full correction is indicated in all cases, especially when squint is present.

The Parallax Test for Heterophoria.—Duane (*Arch. of Ophthal.*, xxiv, 2) describes the method of examination as follows:

Place the patient in the primary position, with head erect and eyes directed straight forward or slightly below the horizontal plane. The object of fixation, twenty feet distant, may be a candle flame, but preferably is a white spot one or two centimetres in diameter, upon a dull black surface. The patient's gaze being fixed on the spot, a card is placed before one eye and passed alternately from that to the other, the patient being at the same time asked whether the spot appears to move, and if so, in what direction. If it remains stationary there can have been no deviation behind the card, and the position of both eyes is perfect. If, however, the spot moves, it must occupy a different position as seen by the two eyes. Thus, if on uncovering the left eye, the object appears to move to the patient's left, there is really a homonymous diplopia, which differ from ordinary diplopia only in the fact that the two images are seen alternately instead of at the same time. If the object seems to move to the right, there is crossed diplopia. If the object moves down, the eye must have been higher behind the screen. If the object moves up, the left eye must have been lower behind the screen. In order to determine the amount of this alternate

diplopia, we place prisms of the appropriate direction and strength before one eye until the movement is abolished. For near points the test is made in the same way, a small dot on a rather large card being employed, and the movement of the dot upon the card being observed.

Arecolin, a New Meiotic.—Lavagna (*Ctrlbl. f. prakt. Aug.*, October, 1895) reports on the hydrobromide of arecolin as a meiotic. It salivates, as pilocarpine does. It is decomposed in water at 100° F. A solution of 1 to 100 instilled into the eye causes spasm of the lid and conjunctival injection at once, and in two minutes clonic contractions of the iris. The meiosis reaches its maximum in ten minutes and disappears in seventy minutes, and during its continuance macropsia is complained of. Spasm of the ciliary muscle appears before the spasm of the iris, reaches its maximum in one minute, begins to diminish in seven minutes, and disappears in thirty-five minutes.

The Value of Scopolamine Hydrochloride in testing Refraction.—Murrell (*Ann. of Ophthal. and Otol.*, October, 1895) believes that a one-tenth of one-per-cent. solution of hydrochloride of scopolamine is absolutely positive in its control of accommodation, and therefore reliable from one to twelve hours after instillation. In proper strength it is non-toxic; it is the least trouble of any mydriatic; it is convenient in that the examination can be made at any time convenient to surgeon or patient within twelve or more hours; it keeps well and lasts long, one grain being enough to test the refraction of five hundred patients.

Scopolamine Hydrobromide.—Hobbs (*Amer. Jour. of Ophthal.*, January, 1895) says that scopolamine requires about two hours, with intervals of twenty minutes between the instillations, to bring about the desired result. Its paralysis lasts from two to three days. It produces no unpleasant effects upon the throat, and it allows a possible accommodation within a day and a half or two after its instillation. In some phlyctænular forms of keratitis, as well as iritis in middle life, it seems particularly efficacious. It will in many cases supersede atropine and will entirely supplant homatropine. Its cost still restricts its general use.

Antipyonine and its Therapeutic Application.—Rolland (*Rec. d'ophthal.*, October, 1895) describes antipyonine as a white, unctuous powder, resembling the finest farina, of almost insipid taste, and of faintly alkaline reaction. It is neither toxic nor caustic. He found that it prevented the development of divers micro-organisms which give rise to inflammatory processes without compromising the integrity of the eye or of the neighboring tissues.

Book Notices.

Text-book of General Pathology and Pathological Anatomy. By Richard Thoma, Professor of General Pathology and Pathological Anatomy in the University of Dorpat. Translated by Alexander Bruce, M. A., M. D., F. R. C. P. E., F. R. C. S. E., Assistant Physician and formerly Pathologist to the Royal Infirmary, Edinburgh, etc. Volume I. With Four Hundred and Thirty-six Illustrations. London: Adam and Charles Black. New York: Macmillan & Co., 1896. Pp. xiv–624. [Price, $7.]

The first volume of this well-known work constitutes one of the most valuable contributions to the subject in any language, and English-speaking readers are to be congratulated upon its translation from the German. While it is very complete in all the subjects presented, Thoma's application of the principles of mechanics to circulatory disturbances was immediately recognized, when the work first appeared in Germany, about two years ago, as a distinct advance in our knowledge of many obscure problems relating to the pathology of the circulation and to the mechanical laws governing pathological processes. As this treatise represents many years of labor by one of the greatest of European scholars in medicine, the reader must admire this modest statement in the author's preface: "Since the beginning of my career I have endeavored to investigate the mechanical laws which govern pathological processes, and accordingly have spent much time in the preliminary study of mechanics and mathematics. The results obtained are certainly meagre enough, but may not be unwelcome to many readers." It may safely be said, however, that these results not only are welcome, but must be considered essential by any one, clinician or pathologist, who desires a thorough understanding of the phenomena attending circulatory disturbances in the body.

The chief features of Thoma's conception of the laws of the circulation are stated in his three histo-mechanical principles, which are the following: "First, the increase in size of the lumen of a vessel depends upon the rate of the blood current. Second, the growth in thickness of the vessel wall is dependent upon its tension, and the tension is dependent upon the diameter of the lumen of the vessel and upon the blood pressure. Third, increase of blood pressure in the capillary areas leads to new formation of capillaries." According to these principles he explains the development of blood-vessels in the embryo, and believes that their application may be constantly seen in many pathological disturbances in the circulation. Thoma's explanation of the ætiology of arterio-sclerosis is based upon these principles. The initial lesion leading to this condition is a *loss of elasticity* in the vessel walls, caused by infectious diseases, chemical poisons, or overstraining. Following the usual law, a dilatation of the lumen results from this loss of elasticity and is necessarily attended with a retardation of the blood current. A growth of new connective tissue then begins in the intima and continues until the lumen of the vessel is restored to its original size and the blood stream flows with normal rapidity. Such an explanation, if correct, must be regarded as more fundamental than the theory offered by some writers that arterio-sclerosis represents a chronic productive inflammation of the arteries. Thoma suggests the origin of the chronic productive inflammation. In general, it may be said of this whole chapter relating to circulatory disturbances that all its subdivisions, including stasis, angeiosclerosis, embolism and thrombosis, exudation and transudation, have been so thoroughly and rationally discussed as to render this portion of the work the most authoritative presentation of the subject now extant.

Of the earlier chapters, that relating to the effects of injury is of special interest and value. The author's demonstration that slowing of the blood current leads to a marginal arrangement of the white corpuscles, which may then emigrate through the unaltered vessel wall, is an important tenet, and is emphasized by colored lithographs representing the process. Thoma's personal familiarity with the technics of the experiments on which rests much of our knowledge of the phenomena of inflammation lends additional weight to his views on these difficult questions.

It is to be noted in the chapter on intoxications that the author does not fully accept the present theory of the exclusively hepatogenous nature of jaundice. It is stated that bile

pigment may probably form in the circulation or in the tissues under some favorable conditions, one of which is the comparative absence of oxygen.

A belief in the probable correctness of the parasitic theory of carcinoma is briefly given, with some of the evidence—the earliest of which was given simultaneously by Malassez and by Thoma—on which this theory is based.

Congenital malformations is the subject of a profusely illustrated chapter of fifty pages.

Disturbances of nutrition in the tissues, degenerative and regenerative, are very freely and ably presented in a long chapter copiously illustrated with original drawings of remarkable accuracy.

After reviewing the history of the doctrine of inflammation, from Celsus through Boerhaave, Virchow, Cohnheim, and others, Thoma defines inflammation as "a local lesion formed by the combination of the phenomena of circulatory disturbances and progressive and retrogressive tissue metamorphosis."

He goes on to discuss the practical inutility of the doctrine of inflammation, maintaining that this doctrine retires more and more into the background as the advance of our knowledge discloses the actual ætiological connection of the phenomena of inflammation. Thus, cloudy swelling and fatty degeneration of the viscera are no longer described as inflammations, since it is now plain that these processes are strictly the result of disordered metabolism. In like manner the author's investigations go to show that endarteritis nodosa is merely the result of the disturbance of the histo-mechanical relations between the rate of the blood stream and the nutrition of the vessel wall. Accordingly, Thoma recommends the abandonment of the doctrine of inflammation and its replacement by expressions more in accordance with our knowledge. This line of argument has commended itself not only to Thoma, but to Andral, Neumann, and others, and, we believe, indicates the true line of advance in the classification of our present knowledge of pathological processes.

The remarks on the ætiology of tumors are an excellent presentation of the recognized views on this subject. The author specially emphasizes the importance of defects in the germinal area other than the aberrant cell groups of Cohnheim as a frequent cause of neoplasms. The entire chapter on tumors is one of the most valuable to be found in any text-book. We do not find that the author recognizes the growing tendency to extend the conception of endothelioma which has culminated in Volkmann's recent masterly article.

In general, the special value of this work, on a subject on which we now have an abundance of text-books, seems to lie in the fact that it represents throughout the labor and the ideas of one man, and of one whose conceptions of some problems at least are possibly clearer than those of any one else and more aggressively stated. The first volume of the work, while adapted to all classes of readers, seems specially addressed to students of pathology, none of whom should remain unacquainted with its particular features. The very large number of drawings which illustrate the text are nearly all original, are all carefully finished in detail, and in a great many instances are unequaled by those of any work with which we are familiar.

It is gratifying to note that the intelligence and demands of English readers are properly regarded by the publishers, and that the complete bibliography of the original work is included in the English edition. Too much praise can hardly be given to the work of the translator. The diction is always pure and readily intelligible, the author's meaning reappears accurately, and there is an entire absence of the traces of foreign style so frequently found in English translations of German medical works. Finally, the publishers have presented a volume which in binding, paper, printing, and general detail is of a very high order.

Voice Building and Tone Placing. Showing a New Method of Relieving Injured Vocal Cords by Tone Exercises. By H. Holbrook Curtis, Ph. B., M. D., Fellow of the New York Academy of Medicine, etc. New York: D. Appleton & Company, 1896. Pp. xii–215. [Price, $2.]

The object of this work is primarily to set forth a method of relieving the laryngeal difficulties from which singers suffer by the employment of tone exercises. The legitimate need for such a therapeutic measure can not be doubted by any one who has witnessed the failure of much of the oldtime drug and topical treatment to afford relief to overworked vocal cords. Moreover, the task assumed by the author is only the application along a special line of the ideas of hygiene which are such an important element of modern medicine. The question to be decided in this special instance is, Does the proposed remedy really do what is alleged for it?

Musical artists and teachers are notoriously apt to differ with one another in regard to the principles and practice of their calling. We are not surprised, therefore, to find that, while the book contains perhaps little to which a medical man could take exception, some of the musical critics have been over-fervid in assailing the author's views.

The first chapter, on the origin of music, has no special office in a work of this kind. Any one could find a much better exposition of the subject in a good encyclopædia. Chapter second discusses the anatomy and physiology of the larynx. Nothing heterodox is introduced. The subject of laryngeal innervation is still in an unsettled state, and hence there are current varying opinions as to the resulting action of the different groups of muscles concerned in phonation.

The third chapter, on respiration, the fourth, on the vocal resonators, and the fifth, on tones and overtones, call for no special remark. The author advocates for singers the "fixed high chest method" of breathing when the superior costal type is added to that of the inferior costal and diaphragmatic.

The sixth chapter treats of the registers of the human voice and describes the experiments of Oertel and others.

The seventh chapter discusses tone placing. In it the author vigorously assails the teaching methods of some of the singing masters of the present time, especially those which foster the so-called "*coup de glotte*," which, he says, is death to the voice and is born of ignorance. "To teach or allow its continuance is a crime."

The eighth chapter considers voice building. It contains a variety of musical exercises intended to develop the voice in the manner which the author regards as rational and in accord with physical and physiological laws.

The ninth and final chapter dwells on voice figures, and relates the well-known results obtained with the Wheatstone kaleidophone and Mrs. Watts-Hughes's graphic reproductions of the tones of the human voice.

The author maintains that the method of vocal exercise which he advocates will remove that condition of the cords known as "singer's nodes." Many laryngologists will doubtless feel loath to admit the full truth of this statement, though all admit that improper singing methods are largely the exciting cause of this condition. If the cordal change has not become too pronounced, a further retrogression can undoubtedly be prevented.

Contrasting the writer's views on voice production with those of our most intelligent and progressive singing teachers, it remains to be said that the latter attribute more importance than the former does to the rôle of the extrinsic neck muscles. Undoubtedly, by developing the action of the latter the work of vocalization may be more evenly distributed and the intrinsic laryngeal muscles be spared from overwork. Probably no other laryngologist in America has carried this matter to such a degree of refinement as Dr. Curtis has, and, as he has had under his care many of the most notable singers of the present day, his views are entitled to careful consideration.

Finally, as the book is not written for the medical profession alone, certain features relating to what the author said to Jean and what Jean said to him, etc., are without the pale of criticism in a medical journal.

BOOKS, ETC., RECEIVED.

Twentieth Century Practice. An International Encyclopædia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by Thomas L. Stedman, M. D., New York City. In Twenty Volumes. Volume V. Diseases of the Skin. New York: William Wood & Co., 1896. Pp. ix–3 to 905.

Occasional Papers on Medical Subjects. 1855–1896. By W. Howship Dickinson, M. D., F. R. C. P., President of the Royal Medical and Chirurgical Society, etc. London, New York, and Bombay: Longmans, Green, & Co., 1896. Pp. 247. [Price, $4.]

Obstetric Accidents, Emergencies, and Operations. By L. Ch. Boisliniere, A. M., M. D., LL. D., Late Emeritus Professor of Obstetrics in the St. Louis Medical College, etc. Profusely illustrated. Philadelphia: W. B. Saunders, 1896. Pp. 11 to 381. [Price, $2.]

The Fifteenth Annual Report of the State Board of Health of New York.

Maps accompanying the Fifteenth Annual Report of the State Board of Health of New York.

Weekly Abstract of Sanitary Reports issued by the Supervising Surgeon-General, M. H. S. Vol. X. Nos. 1 to 52.

The Twenty-third Regular Report of the Medical and Surgical Staff of St. Francis's Hospital, Jersey City, for the Year 1895.

The Twenty-fourth Annual Report of Roosevelt Hospital, New York. From January 1, 1895, to December 31, 1895.

Proceedings of the Philadelphia County Medical Society. Volume XVI. Session of 1895.

Transactions of the Massachusetts Medico-legal Society. Volume II. Number 6. 1896.

The Medical Inspection of and Physical Education in Schools. By Charles Roberts, F. R. C. S. Eng., L. R. C. P. Ed. [Reprinted from the *Report of the Royal Commission on Secondary Education.*]

Miscellany.

A Burn of the Entire Surface of the Cornea followed by Recovery.—The April number of the *Journal of Eye, Ear, and Throat Diseases* contains an account of a case which came under the observation of Dr. George A. Fleming, of Baltimore. The patient, a man thirty-eight years old, had been at work in an iron foundry, where he tried to drive a red-hot rivet into a boiler with a sledge hammer. The rivet slipped and, with great force, struck him in the left eye. On examination, a slight cut was found through the skin of the upper eyelid, the skin was seared, the eyelashes were burned off, and the lids were much swollen and extremely painful. Great photophobia and lacrymation were present, which made it very difficult to separate the lids, but after a few drops of a solution of cocaine had been inserted and hot fomentations used, the lids were opened. The whole of the eyeball was covered with small scales of iron, which adhered tenaciously to the surface, but were finally removed with pledgets of absorbent cotton and a probe, aided by a most thorough flushing with hot sterilized water. The entire corneal surface was covered with a grayish, thick exudation, resembling very much that seen in a case of diphtheritic conjunctivitis. The conjunctiva, although intensely injected and swollen, seemed to be intact. The appearance of the cornea was very startling, and the prognosis seemed very grave, as it looked as if not only the epithelial layer, but much of the deeper tissue as well, had been destroyed. The anterior chamber could not be made out at all through the opaque covering, and vision was reduced to light perception only. After the eye had been cleansed as thoroughly as possible and a solution of atropine and cocaine (four grains of each to an ounce of water) had been applied copiously, a pressure bandage was applied. The patient was then sent home and instructed to instill a few drops of the same solution into the eye every few hours, and to return on the following day. When seen the next afternoon, he reported himself as feeling very comfortable, and on removing the bandage and inspecting the eye, Dr. Fleming says, he was greatly surprised to find a perfectly transparent cornea, clear as crystal, and as smooth as the most polished mirror. Except for considerable injection of the conjunctiva, the patient was almost as well as ever and went on to an uneventful recovery.

The object of all treatment in burns of the cornea, says the author, is to allay pain and irritation as much as possible, while Nature heals the injury. No known method of treatment will prevent the burned tissues from sloughing away. All irritants must be excluded as harmful. In the combination of atropine and cocaine indicated above, we have the best possible application for all kinds of burns of the cornea. The cocaine kills the pain while the atropine, by its direct and almost specific action on the cornea, prevents inflammation and assists Nature in the healing process. Both are powerful anodynes, and their combination gives us a most admirable treatment for this class of injuries.

A not uncommon form of injury and a very dangerous one, says Dr. Fleming, is that from lime splashed into the eye. Quicklime acts as a powerful caustic, and often causes complete blindness by destroying the vitality of the cornea and converting it into a hopelessly opaque substance. The gravity of burns of any kind, especially caustics, is not appreciated by inexperienced observers, who are, consequently, likely to make serious errors of prognosis. Even when the conjunctiva only is affected, the eye may be seriously disabled by the growing together of the lid and the ball. The lime or other caustic should, of course, be thoroughly and instantly washed out with water, and any that may remain should be neutralized by bathing the eye with vinegar and water in the proportion of a teaspoonful of vinegar to a glass of water, or rendered inert by sweet oil. The latter is equally efficient and more soothing. In case of injury by acids, one part of limewater to three of water may be used, or the eye may be freely bathed with milk.

Cases of total leucoma following burns, says the author, have been seen, in which the cornea appeared fairly clear for a whole week after the injury, and in the case of a physician who had both eyes injured by strong liquor ammoniæ, the left eye was thought by his medical attendant to be in a satisfactory condition five days after the injury, when in reality the seemingly pellucid cornea was represented only by Descemet's membrane, the entire corneal substance having been destroyed and exfoliated.

A Sixteenth-century Plan of treating Prolapse of the Uterus.—In the *Indépendance médicale* for April 22d we find an account, by M. Fiessinger, of how Amatus Lusitanus, about the year 1550, treated a case of falling of the womb. While lifting a heavy weight, a young woman had felt pain in the loins and in the lower belly, and uterine prolapse was diagnosticated. For Amatus to correct the displacement himself would have been indelicate, so a midwife was ordered to do it. When she had accomplished her part, a simple plan was resorted to for maintaining the organ in place. As everybody knew, the uterus was pleased with sweet odors; so the patient was directed to breathe the emanations of musk and fragrant herbs, and the womb would surely mount in the direction of her nostrils. But this was not all. The repugnance of the organ to unpleasant odors was also well known; therefore the vulva was exposed to the smell of galbanum and the fumes of burned feathers. Thus lifted from above and pushed up from below, the womb could not fail to be kept in place.

Calcium Carbide in the Treatment of Cancer of the Uterus.—At a recent meeting of the Académie de médecine, a report of which appears in the *Gazette médicale de Paris* for April 18th, M. Guinard stated that for the last three months M. Peyrot had employed this substance in treating cancer of the uterus. The mode of treatment was as follows: A piece of the calcium was placed directly in the vault of the vagina, where it very soon became decomposed into calcium oxide and acetylene by contact with the moisture. At the end of several days the oxide was removed by means of irrigation with corrosive sublimate. This treatment could be repeated several times. The results were very appreciable, said M. Guinard, for the diseased parts assumed a grayish tint and became smooth, and the hæmorrhages, the fœtid discharge, and the pain were suppressed by this procedure. Diarrhœa, also, he said, could be avoided by the employment of small pieces of this substance.

With regard to the mode of action of calcium carbide, said M. Guinard, it was rather complex. The nascent quicklime acted, without doubt, in concert with the acetylene, which passed into the urine, where it had been found. Perhaps, he said, by contact with the cancerous elements, it formed a sort of special coagulation of the blood, analogous to that which was observed in persons who had been poisoned by gas.

The Suprarenal Capsule in the Treatment of Neurasthenia.—In the *Journal des praticiens* for April 18th M. Huchard remarks, in regard to this treatment, that Epelbaum referred to it in his recent thesis on organo-therapy. He alluded to Chauffard's and Langlois's observations, in which the results had not been well demonstrated. He also recalled two instances in which this treatment had appeared to produce a real amelioration, and he reached the conclusion, says M. Huchard, that the preferable method of administration of suprarenal capsules was by the ingestion of the fresh gland, as its active principle was not altered by the gastric juice. The daily amount to be given is from fifteen to thirty grians.

Brown-Séquard's experiments, and the more recent ones of Abelous, Langlois, and Albanese, says the author, have established the fact that the physiological function of the suprarenal capsules is to transform or to destroy the toxic substances which are produced in the organism under the influence of muscular activity and of the nervous system. We may thence understand, he says, why the destruction of these organs experimentally or by the disease is capable of causing in the organism an accumulation of toxic agents which is the principal cause of the sensation of extreme fatigue and of the profound and generalized asthenia experienced by patients who suffer with Addison's disease. In neurasthenia, then, he says, patients may be benefited by this treatment, and if it is not possible to obtain the fresh gland, tablets may be given, from three to four every day.

Up to the present time, says M. Huchard, the observations have not been numerous enough to permit of absolute conclusions on the results obtained, but he thinks the remedy is worthy of attention in the treatment of a disease so rich in pathogenic theories and so poor in curative treatment.

The numerous theories that have been advanced, he says, have not contributed in any degree to the cure of this disease, and it would not be irrational to search for the proper medication among the organs which may be considered, with good reason, as the best preservatives from fatigue and from asthenia.

M. Huchard thinks that this treatment should be persevered with, not only because it seems to be indicated by pathological physiology, but because it has not yet given rise to accidents when used in moderation.

The Treatment of Sick Headache.—The *Presse médicale* for April 15th contains a short article on this subject by M. Critzman, in which he remarks that the most rational mode of treatment, and one which he has had occasion to employ a number of times, is the following: 1. The hyperæsthesia of the painful region must be diminished by aspersion with Seltzer water. 2. Immediately afterward energetic pressure must be practised on the temples. This pressure will then be bilateral. In order to compress the blood-vessels, their exact site should be determined; a common cork is then cut into round pieces, which are applied to the arteries, and a moist bandage of gauze is passed around the head several times. 3. Every two hours a capsule containing the following mixture should be given:

Sparteine sulphate.....	0·3 of a grain;
Caffeine citrate.....	1·5 grain;
Antipyrine.....	8 grains.

Four of these capsules are to be given, even though the pain may have completely disappeared. 4. If there is gastric intolerance, which frequently occurs, this mixture may be given in the form of an enema.

This treatment, says M. Critzman, cuts short the attack and suppresses both the pain and the nausea at the same time.

The American Climatological Association.—The thirteenth annual meeting will be held in Lakewood, N. J., on May 12th and 13th, under the presidency of Dr. James B. Walker, of Philadelphia. The programme includes the following titles: The address of welcome, by Dr. Isaac Hull Platt, of Lakewood, N. J.; the president's address—The Difficulties attending Climato-therapy, by Dr. James B. Walker, of Philadelphia; Laryngeal Vertigo, by Dr. F. I. Knight, of Boston; Sensible Temperatures, by Dr. W. F. R. Phillips, of Washington; Clinical Reports of Serious Heart Lesions without Well-marked Continuous Physical Signs, by Dr. H. L. Elsner,

of Syracuse, N. Y.; Congenital Mitral Constriction as a Cause of Dwarfed Lives and Irritable Heart, by Dr. R. G. Curtin, of Philadelphia; Febrile Endocarditis in the Aged, by Dr. W. M. Gibson, of Utica, N. Y.; The Climate of Arizona, by Dr. Mark A. Rodgers, of Alleghany, Pa.; The Influence of Climate on Genito-urinary Tuberculosis, by Dr. J. C. Munro, of Boston; The Treatment of Cervical Adenitis, by Dr. E. Fletcher Ingals, of Chicago; Mount Pocono, Pennsylvania, as a Health Resort, by Dr. L. D. Judd, of Philadelphia; Fibrinous Bronchitis, by Dr. John Winters Brannan, of New York; The Uric-acid Diathesis and its Effect on the Upper Respiratory Passages, by Dr. William F. Dudley, of Brooklyn; The Influence of the Climate of Pueblo, Colorado, on Asthma, by Dr. W. W. Bulette, of Pueblo, Col.; a report of the committee on health resorts, by Dr. E. O. Otis, of Boston; The Present Treatment of Hæmoptysis, by Dr. Charles E. Quimby, of New York (to be discussed by Dr. Solly, of Colorado Springs; Dr. Coolidge, of Boston; Dr. Musser, of Philadelphia; Dr. Babcock, of Chicago; and Dr. Mulhall, of St. Louis); The Sanatorium or Closed Treatment of Phthisis, by Dr. E. O. Otis, of Boston; A Plea for Moderation in our Statements regarding the Contagiousness of Tuberculosis, by Dr. Vincent Y. Bowditch, of Boston; A Rational Basis for Prophylactic Measures against Pulmonary Tuberculosis, by Dr. David H. Bergey, of Philadelphia; News—Old News, by Dr. Samuel A. Fisk, of Denver; A Study of Highly Mineralized Thermal Waters in the Treatment of Disease, Based on Experience at the Glenwood Hot Springs, Colorado, by Dr. Henry H. Schroeder, of New York; Mechanical Water Filters, by Dr. W. D. Robinson, of Philadelphia; Pneumonia in Florida, by Dr. Frank Fremont-Smith, of St. Augustine, Fla.; and A Rare Case of Dissecting Aneurysm of the Aorta, by Dr. Judson Daland, of Philadelphia.

Eucaine, a new artificial alkaloid, said to be the methyl-ester of a benzoylated oxypiperidinecarbonic acid, is said by H. Kiesel, a Berlin dentist (*Zahnärztl. Rundschau*, April 5, 1896), to be as efficient as cocaine in inducing local anæsthesia, and in some respects superior to that drug in dental practice. Kiesel thus enumerates its advantages:

1. The heart is in no way influenced by it. In fact, I have noticed that in very nervous patients, whose pulse had risen to 120 and 130 before the operation, the heart beats became normal and regular very soon after the injection.

2. The anæsthesia is more extensive in area and lasts longer than that of cocaine. In some of my experiments the analgesia extended even to the muscles. In one case, where an injection was given over the first incisor, there occurred paralysis of the ala nasi and anæsthesia of the nasal mucous membrane on the right side. The patient declared that her nose felt as if it was stopped up, but the sense of smell was not interfered with.

3. As much as thirty grains of eucaine may be injected without trouble; while an equally safe dose of cocaine is only one sixth of a grain. Thus, of a solution of 1 to 6½, about fifteen per cent., twelve syringefuls would constitute a maximum dose. Half that quantity would, however, under favorable circumstances be sufficient to render the extraction of all the teeth painless.

4. Solutions of 1 to 6½ in sterilized water are permanent at the ordinary temperature of the room. They remain clear without the addition of carbolic or salicylic acid and do not become flocculent as cocaine does.

5. Finally, I am informed that it is intended to put eucaine on the market at a price considerably lower than that of cocaine.

The American Gynæcological Society.—The twenty-first annual meeting will be held in New York on May 26th, 27th, and 28th, under the presidency of Dr. William M. Polk, of New York. The programme includes the following titles: An address of welcome, by Dr. William T. Lusk, of New York; Vaginal and Senile Endometritis, by Dr. Paul F. Mundé, of New York; The Liability to Prosecution for Damages in Abdominal Surgery, by Dr. Cyrus A. Kirkley, of Toledo, Ohio; Gynæcology and General Medicine, by Dr. Chauncey D. Palmer, of Cincinnati; Woman and her Diseases *versus* Gynæcology, by Dr. H. P. Newman, of Chicago; Aids in Obstetric Teaching, by Dr. J. Clifton Edgar, of New York; Pregnancy following the Removal of Both Tubes and Ovaries, by Dr. S. C. Gordon, of Portland, Me.; Double Ovariotomy followed by Pregnancy, by R. S. Sutton, of Pittsburgh; The Treatment of Intraligamentous and Retroperitoneal Uterine Fibromyomata, by Dr. William H. Wathen, of Louisville; The Treatment of Retrodisplacements of the Uterus, by Dr. E. E. Montgomery, of Philadelphia; the president's address, by Dr. William M. Polk, of New York; The Technics of Vaginal Hysterectomy, by Dr. Paul Ségond, of Paris, France; The Treatment of Extra-uterine Pregnancy, by Dr. Howard A. Kelly, of Baltimore; The Treatment of Early Rupture of Extra-uterine Pregnancy, by Dr. Fernand Henrotin, of Chicago; Suspensio Uteri, with Reference to its Influence upon Pregnancy and Labor, by Dr. Charles P. Noble, of Philadelphia; The Relative Merits of Vaginal Hysterectomy by Ordinary Methods and Supravaginal Excision by Galvanocautery, by Dr. John Byrne, of Brooklyn; The Diagnosis and Treatment of Ureteritis in Women, by Dr. Edward Reynolds, of Boston; The Implantation of the Ureter into the Bladder, by Dr. H. J. Boldt, of New York; Surgical Injuries of the Ureter, by Dr. J. M. Baldy, of Philadelphia; A New Method of Closing the Abdominal Wound, by Dr. E. C. Dudley, of Chicago; Intestinal Bacteria as a Source of Infection, Complicating Obstetric Operations, by Dr. Edward P. Davis, of Philadelphia, Drainage of the Stump in Abdominal Hysterectomy, by Dr. H. T. Byford, of Chicago; Myomectomy with Fatal Secondary Hæmorrhage, by Dr. H. D. Fry, of Washington; Foreign Bodies in the Peritoneal Cavity, by Dr. Archibald McLaren, of St. Paul; Cæsarean Section; Total Hysterectomy *versus* Suture of the Uterus, by Dr. H. C. Coe, of New York. The Zoological Position of the Menstrual Wave, by Dr. Arthur W. Johnstone, of Cincinnati; In Memoriam—Dr. Thomas Keith, by Dr. A. J. C. Skene, of Brooklyn; Dr. W. W. Jaggard, by Dr. James H. Etheridge, of Chicago; and Dr. Robert Battey, by Dr. Thaddeus A. Reamy, of Cincinnati.

The Treatment of Snake-bite with Antivenene.—The *British Medical Journal* for April 18th contains an abstract of an address on this subject which was recently delivered before the Royal Institution of Great Britain by Dr. Fraser.

The writer states that the author's experiments were chiefly made with the venom of the cobra, although the more important of them were repeated with the venoms of the crotalus of America, the *Sepedon hæmachates* of Africa, and a large serpent of an undetermined species from the Diamantina district of Queensland.

Dr. Fraser defined the minimum lethal dose for several species of animals, and showed how protection was produced by the administration of gradually increasing doses until, with cobra venom, for instance, rabbits became so far protected as to be able to receive in a single dose a quantity sufficient to kill fifty animals, and in the course of five or six months a total quantity sufficient to kill three hundred and seventy animals of the same species and weight.

The author's experiments were so planned, says the writer, as to obtain in several conditions of administration as exact a definition as possible of the antidotal power of the antivenene. In one series of experiments cobra venom was mixed outside of the body with this antivenene, and within a few minutes thereafter the mixture was injected under the skin of the animal; in a second series the venom and antivenene were separately and nearly simultaneously injected into opposite sides of the body; in a third series antivenene was injected thirty minutes before the venom; and in a fourth series the venom was first injected, and thirty minutes afterward the antivenene.

In the fourth series, where the results give the truest indications of the antidotal value of antivenene in the actual treatment of snake-bite, it was found that the smallest quantity of antivenene that could prevent death when injected thirty minutes after slightly more than the minimum lethal dose of venom was 0·65 cubic centimetre to a kilogramme; when injected thirty minutes after one and a half the minimum lethal dose it was 3·2 cubic centimetres to a kilogramme; and when injected thirty minutes after twice the minimum lethal dose of venom it was five cubic centimetres to a kilogramme.

Dr. Fraser thinks that it is impossible to consider the great difference between the dose of antivenene required when the two substances, though in each case simultaneously administered, are, in the one case, mixed together before injection, and in the other not so mixed, without having the suggestion again raised that the antidotism is the result of chemical and not of physiological reactions.

In the experiments which he has hitherto described, and, indeed, apparently in all others made in this new subject of serum therapeutics, protection has been produced and the antidotal properties of the antitoxic blood serum have been tested by the subcutaneous, or less frequently by the intravenous, injection of the venom or other toxic substances. No endeavor seems to have been made to discover how far the same effects or what effects may be produced by stomach administration.

Expecting that results of an interesting nature might be obtained by this method of administration, Dr. Fraser adopted it for the introduction of both antivenene and venom into the body, and the results, he says, have exceeded his anticipations.

Among other experiments with antivenene single doses of seven and of ten cubic centimetres to a kilogramme were introduced into the stomach of white rats, in some instances three hours, in others two days, and in others three days before one and a half the minimum lethal dose of venom was subcutaneously injected, and in all cases the animals recovered.

With the object of determining, in the first place, if the disputed statement is correct that serpents' venom is inert, or nearly so, when introduced into the stomach of an animal, some cobra venom was administered in a series of gradually increasing doses to a cat until finally it had received a single dose eighty times as large as the minimum lethal, and to each of six white rats single doses corresponding to ten, twenty, forty, three hundred, six hundred, and a thousand times the minimum lethal dose if given by subcutaneous injection. Although no definite poisonous symptoms were produced by even the largest of these enormous quantities, it was found that the cat had so far been protected that it could afterward receive by subcutaneous injection an amount half as large again as the minimum lethal dose of cobra venom without any other injury than some localized irritation at the seat of injection, and that the white rat, into whose stomach a thousand times the minimum lethal dose had been introduced by one administration, survived perfectly when, seven days afterward, the minimum lethal dose of venom was injected under the skin. It was also found that the blood serum of the cat was definitely antivenomous, and the curious fact, further, was ascertained that her progeny had acquired protection through the milk supplied by the protected mother, thus, says the writer, supplying a scientific foundation for the half-admitted conviction expressed by Oliver Wendell Holmes throughout his *Romance of Destiny* in regard to the heroine, Elsie Venner.

These significant facts have been extended by a number of other experiments on white rats. In one series of experiments each animal received by stomach administration five hundred times the minimum dose that would have been fatal if given subcutaneously, and, as before, no definite toxic symptoms were observed. On the day following this administration, three of the animals received subcutaneously one and a half the minimum lethal dose of the same cobra venom, and they all recovered.

In the second series of experiments a dose of cobra venom equivalent to a thousand times the minimum lethal dose, if subcutaneously injected, was introduced into the stomach. On several occasions in which this had been done, a subsequent injection under the skin of one and a half the minimum lethal dose, made in some experiments two days and in others three days afterward, resulted in the recovery of the animals. The extraordinary result was thus obtained that serpents' venom introduced into the stomach in a large quantity, in a quantity which, if injected under the skin, would be sufficient to kill a thousand animals of the same species and weight, while it failed to produce any definite symptoms of poisoning, nevertheless produced in a few hours complete protection against the lethal effect of a dose of venom more than sufficient to kill the animal. Dr. Fraser thinks, says the writer, that there is probably a significance also in the general resemblance between the results of these experiments and of those already described in which antivenene and not venom was introduced into the stomach. They are suggestive not only in regard to serpents' venom, but also to wider questions bearing upon protection against the toxines of diseases and the origin of the antitoxines used as curative agents in the treatment of these diseases.

It is difficult to account for them otherwise, he says, than by supposing that the venom while in the stomach had been subjected to a process of analysis, by which the constituents which are poisonous had failed to be absorbed into the blood or had been destroyed in the stomach or other part of the alimentary canal, while the constituent or constituents which are antivenomous, or rather antidotal, had passed into the blood in sufficient quantity to protect the animals against otherwise lethal administrations of venom. He confidently expects that this natural process of analysis will by and by be successfully repeated outside of the body by chemical methods.

Dr. Fraser cites Mr. Alfred Bolton, who states in the *Lancet* for 1886 that "the natives in Bushmanland, Namaqualand, Damaraland, and the Kalakari are in the habit of extracting the poison gland from the snake immediately it is killed, squeezing it into their mouths and drinking the secretion, and they thereby appear to acquire absolute immunity from the effects of snake-bites. . . . Having a month ago seen a native named Snellsteve, who is a snake-poison drinker and a snake collector, put his hand into a box containing two yellow cobras and several horn and night adders, in doing which he was severely bitten, and has never since suffered anything more than a little pain, such as might be caused by any

trivial mishap, I feel I can no longer refuse to believe in the efficacy of the snake virus itself as a remedy against snake poison."

The results of the experiments in which the venom was introduced into the stomach probably afford, says the writer, an explanation of the protection enjoyed by certain snake charmers, as well as by other individuals who profess to be protected, whether members of special sects or not; for although inoculation of the venom is apparently sometimes practised by them, and protection is no doubt assisted and maintained by the bites which, with impunity, they frequently receive, they are known also to swallow venom or the poison glands containing it.

These experiments also seem to throw a new light upon the clearly established protection possessed by venomous serpents against their own venom. They suggested the importance of determining if the blood serum of venomous serpents contained, as like that of artificially protected animals, an actual substance possessing antivenomous properties.

In order to arrive at some definite conclusions on this subject, Dr. Fraser obtained last year from India several living specimens of the hamadryad (*Ophiophagus elaps*), a serpent of greater size and more aggressive disposition than the cobra, and reputed to be as deadly. From the blood of several of these serpents a serum was separated which, when dried, gave a product having the same physical characters as the antivenene from artificially protected animals. It was tested against cobra venom, both when mixed with rather more than a minimum lethal dose and also when injected thirty minutes after this lethal dose of cobra venom. In the former case, 0·25 cubic centimetre to a kilogramme of this antivenene prevented death; and, indeed, so perfectly antagonized this certainly lethal dose that no decided symptoms of poisoning were manifested. In the latter case, five cubic centimetres to a kilogramme was found to be a sufficient quantity to prevent death.

The foregoing statements, says the writer, although referring mainly to observations on the lower animals, have probably in every particular a very direct bearing on both the prophylaxis and treatment of snake poisoning in man. Dr. Fraser thinks that it is impossible to estimate the dose of venom that is introduced in snake-bite in man, for the nature of the patient's symptoms can not give information even approximately. In searching for a solution of this problem, he says, several facts were taken into consideration which led him to conclude that the smallest quantity capable of producing death in a man of a hundred and forty pounds would, according to certain data, be about 0·0317 of a gramme. In order to successfully prevent death from this dose it is probable that three hundred and thirty cubic centimetres, or about eleven ounces and a half, of antivenene would be required if it was injected not much longer than thirty minutes after the bite was inflicted. This is a large but by no means unmanageable dose, and it could, without much inconvenience, be introduced under the skin at several parts of the body. On the other hand, says the writer, Dr. Fraser thinks that the dose would be found to be a considerably smaller one, and one which under the same circumstances could be successfully antagonized by about four ounces of antivenomous blood serum. Each of these quantities, furthermore, could be reduced in bulk about half by dissolving dried antivenene in half the quantity of water required to restore it to its original bulk. Dr. Fraser admits, says the writer, that in both cases the quantity of antivenene required to prevent death is inconveniently large, and it is clearly desirable, he says, that the antivenene treatment should be a practical one, not only for doses of venom which do not exceed the minimum lethal dose, but also for the considerably larger doses that are occasionally introduced in snake-bite.

In the foregoing remarks, says the writer, Dr. Fraser has shown that human life may be saved with the antivenene in a considerable, if not in a large, proportion of the cases of snake-bite which would otherwise terminate in death. The attainment of this result, he says, is a satisfactory one, for the mortality from snake-bite is large, and it is not restricted to the twenty thousand deaths which occur annually in India, but includes additional thousands in all the tropical and subtropical regions of the world.

The Duration of Life among Physicians.—The *Progrès médical* for April 18th says that Dr. Salzmann, of Essling, Germany, has made researches in regard to this subject among the archives of the German provinces, and obtained the following proportion: In the sixteenth century the mean duration of life was thirty-six years and five months; in the seventeenth century, forty-five years and eight months; in the eighteenth century, forty-nine years and eight months; and in the present century, fifty-six years and seven months. These results, says the *Progrès médical*, are encouraging, and show that the favorable increase in the duration of life is due to the progress of preventive medicine, and especially to the great diminution of typhoid fever and small-pox.

Xeroform, another New Antiseptic.—In the *Therapeutische Wochenschrift* for April 19th, Dr. E. Heuss, of Zürich, remarks that xeroform, or bismuth tribromphenol, $C_6H_2.Br_3$-O-Bi-O, was recognized as an efficient intestinal antiseptic in the last cholera epidemic in Hamburg, but has hitherto been quite unknown as a surgical antiseptic. It is an exceedingly fine yellow, neutral, insoluble powder, stable in the light, having a faint odor of carbolic acid, almost non-poisonous, and unirritating to mucous surfaces. It has but little effect on the human organism, but it is so highly poisonous to the comma bacillus that Hueppe declared it almost a specific against the cholera micro-organism. The author's experiments, published in the *Therapeutische Monatshefte*, show that it is an excellent surgical antiseptic. He first used it with very good results in the treatment of chancroids; if they were not complicated with buboes, they healed in from eight to fourteen days. In various suppurative and necrotic affections, such as foul ulcers, buboes, infected wounds, paronychia, etc., after a preliminary cauterization with pure carbolic acid, it promoted the cessation of suppuration and led to prompt granulation and cicatrization. It never gave rise to any surrounding inflammation. In burns, xeroform, like iodoform, seemed to exert an anodyne action. In such skin diseases as impetigo and sycosis it did not seem superior to other applications that are in common use, but in eczema impetiginodes and eczema madidans a ten-per-cent. paste of xeroform promptly checked the discharge, and cicatrization speedily ensued. It seemed to have a favorable effect in a few cases of localized itching, and a number of tuberculous ulcers and glands healed quickly under a xeroform dressing applied after curetting.

It may be given internally in doses of from seven to fifteen grains, three times a day, in intestinal catarrh, including the summer diarrhœa of children, also in chronic urticaria and in certain forms of eczema in children.

Xeroform seems to be itself inert, but on its coming in contact with an alkaline liquid, such as the tissue juices, the tribromphenol is gradually set free and exerts its action on the bacteria, while the bismuth oxide tends to check fermentation and acts as a desiccant. Xeroform is inferior to iodoform as a promoter of granulation. Its antiseptic power

seems to be somewhat impaired by mixing it with fatty substances; hence it is better to use pastes or a gauze impregnated with it. Its cost is about the same as that of iodoform, but it is cheaper to use it, because only about half the amount is required that would have to be employed of iodoform.

The New York Academy of Medicine.—At the last stated meeting, on Thursday evening, the 7th inst., Dr. Henry W. Berg was to read a paper on The Polyarthritis of Scarlet Fever, and the subject was to be discussed by Dr. Newton M. Shaffer, Dr. V. P. Gibney, Dr. W. H. Park, Dr. John W. Brannan, and Dr. Joseph E. Winters.

At the next meeting of the Section in General Surgery, on Monday evening, the 11th inst., the following papers will be read: Multiple Calculi of the Prostate, by Dr. L. B. Bangs; and The Diagnosis of Some of the Common Injuries about the Shoulder, by Dr. A. C. Victor. Patients will be presented by Dr. Curtis, Dr. Gibson, Dr. Foote, Dr. Coley, Dr. Swinburne, Dr. Blake, Dr. Fisk, Dr. Walker, and Dr. Townsend.

At the next meeting of the Section in Genito-urinary Surgery, on Tuesday evening, the 12th inst., Dr. T. H. Manley will read a paper on The Diagnosis of Liquid or Semi-liquid Formations in the Inguino-scrotal Region; and Dr. Herman Goldenberg will read one on Bacteria in the Urine. The following cases will be presented: A case of congenital occlusion of the urethra in a man, by Dr. C. W. Allen; a case of castration for enlargement of the prostate gland, by Dr. H. Lilienthal; and a case of false passage outside of a urethral stricture, by Dr. J. P. Tuttle. New instruments and specimens will be exhibited.

At the next meeting of the Section in Pædiatrics, on Thursday evening, the 14th inst., Dr. Charles A. Dana will read a paper on Convulsive Tic in Children (to be discussed by Dr. W. H. Thomson, Dr. B. Sachs, Dr. E. D. Fisher, Dr. F. M. Crandall, and Dr. Frederick Peterson). Patients will be presented.

The Clinical Value of Diuretin.—The *Lancet* for April 25th contains an article on this subject by Dr. Louis Vintras, who remarks that with special drugs of this description the difficulty the practitioner meets with is to determine the particular class of cases in which they may be of value. When first introduced these therapeutical agents are given somewhat at random, and most often only isolated cases are reported or the results merely tabulated under a symptomatic heading without distinguishing the real pathological conditions; hence, he says, arises much of the praise which is lavished on indifferent drugs, while others which have a real clinical value are allowed to fall into disrepute, especially in the case of a drug such as diuretin, which is meant for the relief of a symptom under certain conditions which can only be determined after a long period of probation.

Dr. Vintras cites a few typical cases in which he has seen this diuretic given with varied results as the means of furnishing the best indications for further investigations, of which the following are examples:

A man, aged fifty-seven years, was admitted to the French Hospital in September, 1893, with œdema of the lower extremities, marked cyanosis, difficulty of breathing, and scanty secretion of urine. He had been ill for several months and the disease had made rapid progress within three weeks. There was a well-developed murmur accompanying the first sound, the pulse was irregular and hard, the superficial veins were congested, and the patient was unable to remain for any length of time in bed. He was ordered digitalis and nux vomica, and improved gradually at first. At the beginning of October the secretion of urine became again much diminished and diuretin was ordered in two-grain doses every hour with good results. The urine, which had been smoky, dark-colored, and thick, became rapidly clear and increased in quantity. Three days after the beginning of this treatment the patient was passing four pints in the twenty-four hours; he could remain in bed with comfort and slept comparatively well. After five days the use of diuretin was stopped and larger doses of digitalis were substituted. The œdema of the lower extremities, however, continued and punctures were made. The patient rapidly improved, the cyanosis disappeared, the breathing was free, and by the beginning of December he was able to leave the hospital and resume his work.

A man, aged forty-four years, was admitted to the French Hospital toward the end of 1893. He was a sturdily built individual, but had been suffering from shortness of breath and pain in the left side over the region of the heart for several years. For three months he had been obliged to relinquish his occupation, complaining mostly of a hard, hacking, dry cough, a sense of oppression over the chest, and sleeplessness. He could not keep the horizontal posture and passed most of his time in an armchair, bent forward, with his head reclining on the side of the bed. The physical signs consisted in a loud murmur accompanying the second sound and a jerky, hard pulse with occasional intermittence. The urine was thick and coffee-colored, with a heavy deposit, and contained a small amount of albumin, while the quantity of urine varied greatly, but was at times very scanty. The case was one of aortic regurgitation. He was put on the use of digitalis and nux vomica, with a mixture containing codeine and oxymel scillæ to relieve the cough. The digitalis had only a transient action; at the end of ten days it failed to give any relief and was abandoned. When it was resumed, a fortnight later, the patient seemed to improve, but about a month after his admission he became much worse and the quantity of urine rapidly diminished. He passed only a few ounces at a time and sometimes not half a pint in all in twelve hours. The œdema of the lower extremities also rapidly increased. He was then ordered two grains of diuretin every hour. The drug acted well. In the first twenty-four hours the patient passed over two pints of urine. It was still thick, but improved on the second day; on the third day it amounted to between three and four pints. After four days the œdema had almost entirely disappeared. Tincture of strophanthus was then substituted. The general condition had also greatly improved; the patient slept well and was able to remain in bed without inconvenience. He felt so much better that a fortnight later he asked to leave the hospital. The amelioration, however, says Dr. Vintras, could only be temporary, and he heard that the man had died about three months later.

A man, aged thirty-seven years, had been suffering for nearly two years with disease of the liver—hypertrophic cirrhosis. He had been able to work until a fortnight before his admission to the hospital, when he was seized with pains in the loins, a general sense of malaise, and nausea; he noticed that his eyelids were puffy and his ankles swollen. He rapidly grew worse and had to keep to his bed. On his admission he had marked symptoms of uræmia and had scarcely passed any urine for the previous two days. There were œdema of both legs and pitting on pressure, the abdomen was distended with fluid, and there were twitchings of the muscles of the face and hands with low muttering delirium and lucid intervals. The urine contained albumin, but not in large quantities. He was given two grains of diuretin every hour combined with a mixture of nitrate of potassium and acetate of ammonium. Six hours after his admission

he passed eight ounces of urine and a few hours later ten ounces. The case was hopeless from the beginning, and the symptoms were such that he never rallied, but died the next morning.

In considering the value of a therapeutical agent of this kind, says Dr. Vintras, it is not the ultimate termination of the case which should form the basis of judgment, but its effect on an individual symptom. Such a drug as diuretin can not be a specific in any disease, and its action can be exerted only for the relief of a distressing complication. Reviewing, then, the results of these cases, he says, it appears that when the kidney affection is primary and well established—that is, when the deep parts of the organ are affected, as in the parenchymatous form of acute nephritis—and when there is much albumin present, diuretin is of little or no value, while in cases in which the kidney trouble is secondary to morbid lesions in other organs, and the epithelial layer of the urinary tubules is the seat of disease, this diuretic is a valuable therapeutical agent.

Apenta Water.—In the *Medical Press and Circular* for March 25th, Charles R. C. Tichborne, F. I. C., F. C. S., says that he examined this water many years ago, and found that it was constant as regarded its general characteristics. Careful analysis gave the following as its composition:

	Parts in 10,000.
Magnesia (MgO)	70·2
Lime (CaO)	11·5
Iron (Fe_2O_3)	0·43
Alumina (Al_2O_3)	0·30
Silica (SiO_2)	0·32
Potash (K_2O)	0·45
Soda (Na_2O)	92·45
Lithia (Li_2O)	0·20
Sulphuric Acid (SO_3)	259·66
Chlorine (Cl)	10·81
Bromine (Br)	0·10
Carbonic Acid (CO_2)	3·94
Fluorine	trace
Ammonia	trace

When arranged and calculated according to their affinities, these results, he says, give the following as the composition of the Apenta water:

	Grains to the gallon.	Parts in 10,000.
Magnesium sulphate	1474·2	210·6
Magnesium carbonate	12·8	1·82
Magnesium bromide	0·85	0·12
Sodic sulphate	1307·9	186·84
Calcic sulphate	184·31	26·33
Potassic sulphate	5·92	0·84
Lithic sulphate	5·31	0·75
Sodic chloride	123·80	17·69
Fluorine	traces.	.....
Sodic carbonate	33·47	4·78
Calcic carbonate	8·20	1·17
Ferrous carbonate	5·42	0·77
Ammonia (free and albuminoid) traces	0·004	0·00
Alumina	2·10	0·3005
Silica	2·24	0·32
Total (anhydrous) solids	3166·56	452·3

Carbonic-acid gas, not determined.

The Apenta water, says Mr. Tichborne, is a strong purgative water, containing the two valuable aperient salts known as Epsom salts (or sulphate of magnesium) and Glauber salts (or sulphate of sodium) in large proportions, the former preponderating in a very marked degree, thus giving to the water the right to be styled a bitter water, and one which for the same reason is most pleasant to the palate. The result is a purgative combining a secretion-promoting and peristaltic action.

The tumbler (ten ounces) of this water would contain purgatives, 370 grains; antacids, 3·6 grains; salines, 8·5 grains.

This Apenta water, however, possesses special properties which are found combined in very few natural mineral waters, that specially mark it out for the treatment of gouty patients. First among these peculiarities is the large amount of lithia, which is almost unique among strong purgative waters. The lithium sulphate was directly estimated after separating it by alcohol. It is also decidedly chalybeate, although not excessive in astringent properties.

When examined with litmus paper, it shows a faint acid reaction, due to free carbonic acid. On boiling this off, it is found to be alkaline, chiefly from the presence of sodium carbonate. This alkalinity is a most desirable adjunct to a water of this character. The presence of a small proportion of bromine is of some therapeutic value.

To sum up his remarks upon the Apenta water, he says that, taken as a whole, we could hardly wish for a happier combination for a strong aperient water, both for general use and as a special remedial agent. From a bacteriological point of view, it is everything that can be desired.

The William F. Jenks Memorial Prize.—The fourth triennial prize, of four hundred dollars, under the deed of trust of Mrs. William F. Jenks, will be awarded to the author of the best essay on The Ætiology and Pathology of Diseases of the Endometrium, including the Septic Inflammations of the Puerperium. The conditions annexed by the founder of this prize are, that the "prize or award must always be for some subject connected with obstetrics, or the diseases of women, or the diseases of children"; and that "the trustees, under this deed for the time being, can, in their discretion, publish the successful essay, or any paper written upon any subject for which they may offer a reward, provided the income in their hands may, in their judgment, be sufficient for that purpose, and the essay or paper be considered by them worthy of publication. If published, the distribution of the said essay shall be entirely under the control of the said trustees. In case they do not publish the said essay or paper, it shall be the property of the College of Physicians of Philadelphia. The prize is open for competition to the whole world, but the essay must be the production of a single person. The essay, which must be written in the English language, or, if in a foreign language, accompanied by an English translation, must be sent to the College of Physicians of Philadelphia before January 1, 1898, addressed to Barton Cooke Hirst, M. D., Chairman of the William F. Jenks Prize Committee. Each essay must be typewritten, distinguished by a motto, and accompanied by a sealed envelope bearing the same motto and containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay.

The committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year, and it reserves the right not to make an award if no essay submitted is considered worthy of the prize.

Coblentz's Newer Remedies.—The firm of McKesson & Robbins has done well to distribute among the medical profession copies of the second edition of Dr. Virgil Coblentz's *The Newer Remedies*. Within a compass that makes the book suitable for the pocket much practical information is given in outline.

Lectures and Addresses.

THE SURGICAL TREATMENT OF CONSTIPATION:

A CLINICAL LECTURE
AT THE NEW YORK POST-GRADUATE HOSPITAL.

BY CHARLES B. KELSEY, M. D.,
PROFESSOR OF SURGERY.

GENTLEMEN: I shall show you to-day two peculiar cases, which you will do well to bear in mind and think over. One is a man, the other a woman; both are in the higher social scale, being persons of intelligence accustomed to taking the best possible care of their health. In both the thing complained of is a difficulty of defecation. The lady tells me she has absolute loss of power over the evacuations; that she never knows when she is through having a passage; that the fæces sometimes escape without her knowledge; that straining will not force them out, nor will an effort to keep them from escaping be effectual; and that she always wears a napkin.

The man, on the contrary, complains that he has an intussusception; that he spends from two to three hours daily in trying to have a passage after he has thrown into the bowel two or three quarts of water; that straining only produces an obstruction in the rectum; that he is never able to evacuate the water he has injected; that fully two thirds of it either remains in the intestine and is absorbed, or else escapes at intervals during the day; and that he is generally very miserable on this account.

Closer questioning brings out the common symptom in both cases—a lack of voluntary muscular control over the fæcal evacuation. In one case the patient can not expel it at will; in the other, the patient can neither expel it nor prevent its passage at will. The man, who can not expel it at will, tells me he has piles, which used to prolapse, but have not done so for some time. The lady, who can not prevent an evacuation, tells me the rectum has been stretched for a stricture.

These are typical examples of a class of cases which has been occupying my thoughts in a constantly increasing degree for a number of years—these same obscure troubles in defecation which seem to come under no general diagnosis, and for which there is no palpable lesion to account; for in neither of these cases is there any plainly marked disease of the rectum, as such things are ordinarily understood, according to their gross pathological changes. The lady, who can not control her passages and who constantly wears a napkin, has a fairly good sphincter, though it is weak and a little dilated, and she complains of no prolapsus; and the man, who thinks he has an intussusception and who spends hours in injecting water which he can not evacuate, has a good sphincter, and, though he has had piles, has none now, according to his own story, and certainly has none that prolapse at stool.

And yet a closer examination of these two apparently different cases will bring them very close to each other. The lady, for example, although she has a weak and dilated sphincter, for which she blames the doctor who operated upon her for the stricture of the rectum which she never had, still has a fairly good muscle—one amply good enough to prevent the involuntary escape of fæces, were there not some other trouble. We find, on closer inspection, that there exists a marked dilatation of the rectal pouch, as proved by the presence of a voluminous proctocele, and that this, in connection with a weak sphincter, accounts for all her trouble. When the fæces accumulate in the rectal pouch she is unable to expel them merely from lack of muscular force in the rectum itself. They remain there, and because the sphincter is weak gradually dribble away; and this is the cause of her suffering. We cure her by the very simple operation of posterior colporrhaphy combined with a plastic operation for giving the sphincter more power, which consists in removing a V-shaped piece from the skin of the perinæum anteriorly and posteriorly.*

In the male patient the case is different. Here there seems to be a mechanical obstruction to evacuation which he is unable to overcome even by the use of profuse enemata.

There is no trouble with the sphincter, no protrusion of hæmorrhoids, and the diagnosis of chronic intussusception has been made by good men. And yet, as he is here under ether, you will observe this: that as he strains while the rectum is open and the sphincter fully dilated, he simply crowds down into the anus a mass of mucous membrane which, although sufficient to completely occlude it, still does not protrude.

This is the diagnosis: The man has a prolapse which, so to speak, does not protrude. The mucous membrane is too loose; it comes down when he strains; it completely occludes the anus so that neither water nor fæcal matter can escape, and yet it does not come outside the sphincters. We operate upon him with the clamp and cautery exactly as in any ordinary case of hæmorrhoids, and the result will be equally satisfactory.†

It is impossible to call your attention too strongly to these obscure troubles in defecation. Some of them are considered purely rectal; in others the patients seek the aid of the gynæcologist. They go from one practitioner to another, under one diagnosis or another, seeking relief for years and never finding it. One of the most important cases that ever came to me was that of a man in public life who came from the Pacific coast to find if there was any hope of cure except by colotomy, and yet determined to die before submitting to that operation. He had been told that he had a chronic intussusception; defecation was with him always a matter of several gallons of water and half a day's time, and yet he was cured by a milk diet without operation. He was suffering merely from chronic constipation without mechanical obstruction. This is a third class of cases to which you must devote your attention. Another patient came to me simply to know if I could tell her of any new and strange cathartic unknown to the rest of the medical profession.

* Three months after operation the patient reported herself as having perfect control.

† Three months after operation this man was also perfectly well.

She had in her hand a list of all that were known in the pharmacopœia; she had used them all till they had lost their power; she was sure that unless she could find a new and effectual one she would soon die of a stricture of the sigmoid flexure, which she had been assured was present, and yet she has had a daily evacuation ever since, due solely to proper diet, and without surgery or drugs.

A certain other class, examples of which you have seen to-day, are curable only by mechanical means. These include the cases of proctocele, retroversion of the uterus, enlargements of that organ, pelvic tumors, hæmorrhoids, and laceration or loss of power over the sphincters.

I can not tell you any general way of curing them all except by studying each case separately and discovering the nature of the difficulty; but I am sure if you will do that faithfully you will succeed in a very large proportion of all cases. You must remember, however, that when you assume charge of a so-called rectal case you have to do not only with the general health and digestion of your patient, but with every abnormal condition of the whole contents of the pelvis, whether in the male or in the female. The case may not be one of piles, fissure, or fistula, but of uterine, pelvic, or ovarian disease, in which the symptoms referable to the act of defecation merely take precedence over the others and mask the real cause of the difficulty.

18 East Twenty-ninth Street.

Original Communications.

SOME POINTS IN THE PATHOLOGY AND TREATMENT OF ACUTE BRONCHITIS.*

By W. H. THOMSON, M. D., LL. D.,
PROFESSOR OF THE PRACTICE OF MEDICINE IN THE NEW YORK UNIVERSITY MEDICAL COLLEGE.

While the findings of pathological anatomy may be valuable in other respects, they afford us but little assistance toward elucidating the ætiology of acute bronchitis. Thus a typical attack may have been caused by getting the feet wet, or by the presence of the gouty poison in the blood, or by the infection of epidemic influenza; but in either case the bronchitis is just the same so far as the palpable changes in the bronchial mucous membrane go. We have in each, as well as in bronchitis with other antecedents, the same initial hyperæmia of the capillaries and small vessels; then the rapid shedding of the ciliated layer of cells; then the abundant dislodgment of the deeper epithelium, mixed with quantities of lymph corpuscles, while the mucous glands pour forth an abundant secretion, until finally pus cells in numbers are found both upon and under the swollen basement membrane, all alike testifying to the process of active but perverted nutrition which we term catarrhal inflammation. In other words, effects are what we note, but without much insight into the causes of these effects.

On the other hand, in no other inflammation of a mucous membrane do the clinical antecedents and accompaniments afford so many significant facts as to the origin and nature of catarrhal inflammations in general as in bronchitis, as the following considerations may serve to illustrate:

The first of these to which I would advert is the relative liability to catarrhal inflammation. How different that is between different mucous membranes is illustrated by the two tracts of deglutition and of respiration which cross each other in the pharynx. An inflammation beginning in the nasal cavity constantly traverses this crossing on its way to the larynx and bronchi, while it scarcely ever turns into the mouth or down the œsophagus. Mucous membranes, therefore, do not become inflamed simply because they are mucous membranes, for in this case not even the closest proximity, and in part anatomical continuity, suffices to involve one of the two in an affection of the other, however severe that be. A catarrhal inflammation, therefore, is not a tissue inflammation only, so far as its causation is concerned.

This truth is still further illustrated by the fact that bronchitis itself is so seldom caused by direct irritation of the bronchial mucous membrane. The inhalation of irritant particles or elements in the inspired air does not cause bronchitis once where a chill to the cutaneous surface causes it ten times. A primary bronchitis, in fact, is a great rarity, in most marked contrast to inflammations of the skin. Dermatologists seem now to grow increasingly unwilling to ascribe the multiform cutaneous inflammations to other than local causes, to be treated, therefore, only by local remedies. Moreover, the progress of our knowledge of the causes of many local inflammations having shown that they are so often dependent upon specific bacterial infection, it is but natural that some may be inclined to extend this ever-widening ætiology of disease to the common inflammations of the bronchial mucous membrane. But quite apart from the clinical antecedents of most cases of bronchitis, to which I shall advert presently, there is one consideration which seems decidedly to limit the probability that acute bronchitis is often due to bacterial agency. Lister, as long ago as in 1868, drew attention to the fact that inspired organisms do not, as a rule, reach the air cells. He observed that in "simple fracture of the ribs, if the lung be punctured by a fragment driven inward upon it, the blood effused into the pleural cavity from a wound in the highly vascular organ, though freely mixed with air which enters the pleura through the same orifice, undergoes no decomposition. The air is sometimes pumped into the pleural cavity in such abundance that, making its way through the wound in the pleura costalis, it inflates the cellular tissue of the whole body. Yet this occasions no alarm (of septic infection) to the surgeon." In a post-mortem examination of such a case ten days after the receipt of the injury, Lister found the enormously distended pleura free from effusion and perfectly smooth and healthy. This observation he explained by the at-

* Read before the Section in General Medicine of the New York Academy of Medicine, April 7, 1896.

mosphere being filtered of germs by the air-passages. In 1882 Gunning, of Amsterdam, showed that expired air contained no microbes capable of provoking putrefaction in sterile liquids through which it had been passed. In 1887 Straus and Dubreuil independently arrived at a similar conclusion. They spent thirty minutes in expiring from two hundred to three hundred litres of air into tubes in the bottom of which was a layer of sterilized alkaline bouillon. The greater number of these tubes remained sterile; a few showed growths of microbes and molds, doubtless due to accidents of manipulation. Grancher has made many experiments with expired air of phthisical patients, and has never found in it the tubercle bacillus or its spores. Charrin, Karth, Cadeac, and Mallet have made analogous experiments with uniformly negative results.

The most important observation, however, bearing upon our present subject is that of Hildebrandt, which would tend to prove that the air is entirely freed from all germs before reaching the trachea.

These observations I quote from an important communication by Dr. St. Clair Thomson and Dr. R. T. Hewlett, of the Bacteriological Department of the British Institute of Preventive Medicine, to the Section in Pathology at the last annual meeting of the British Medical Association (*Lancet*, January 11, 1896), which led these gentlemen to make a special research into the fate of micro-organisms in inspired air. They calculate that from their experiments the lowest estimate of organisms inhaled every hour into the nose would be fifteen hundred, but that it must be very common in the average London atmosphere for fourteen thousand organisms to pass into the nasal cavities during one hour's tranquil respiration. What becomes of these organisms was the object of their research. Beginning with the trachea, they found that the mucus derived from the trachea of all animals recently killed in the laboratory was always sterile. Proceeding upward, they report that the mucous membrane of the healthy nose only exceptionally shows any micro-organisms whatever. The interior of the great majority of normal nasal cavities is perfectly aseptic. On the other hand, the vestibules of the nares, the vibrissæ lining them, and all crusts forming there, are generally swarming with bacteria. These two facts seem to demonstrate that the vibrissæ act as a filter, and that a large number of microbes meet their fate in the moist meshes of the hair which fringes the vestibule. Not only does this arrangement arrest the ingress of germs, but others which have penetrated into the nose are rapidly ejected by the action of the ciliated epithelium.

I have no time to quote their ingenious experiments by which they demonstrate this remarkable provision to prevent bacterial invasion of the respiratory tract at its very entrance, as well as their demonstration of the further germicidal properties of the secretion of the cells of the nasal mucous membrane itself, our only object being to show that bronchitis and bacteria are not likely to be associated.

The one exception to this statement which has any plausibility is in the case of epidemic influenza. This infection, however, produces so many diverse effects and inflammations throughout the whole body that it proves too much. Why should not the bronchitis which it excites be as much caused by its presence, or the presence of its toxines, in the blood, just as its visceral disorders are so produced, or as gout excites bronchitis, rather than by the direct action of Pfeiffer's bacilli on the bronchial mucous membrane?

On the other hand, the mouth always contains millions of bacteria, and multitudes of them constantly pass down the gullet with every act of swallowing. Yet this bacteria-lined mucous membrane is as rarely inflamed as the respiratory tract is just the opposite, though it be always free from them. That the trachea and bronchi may contain multitudes of microbes in the purulent discharges which come from chronic ulcerative processes in the lungs or air-tubes in phthisis or in chronic bronchitis is a fact which has nothing to do with the causation of acute bronchitis, for such infection of the bronchial secretions is clearly secondary and not primary in its origin.

I have dwelt thus long on the microbic theory of acute bronchitis because false ætiology is so apt to blind some minds to clinical facts which may exist and be of great significance, but which, because they stand in the way of their theories, are then very likely to be ignored by their advocates.

I begin with the clinical fact that bronchitis develops first in the bronchial tubes themselves only in local infections, such as tuberculosis, or in toxic conditions of the blood, as in gout or in uræmia. In all other cases. and they are far the greater number in practice, the bronchial inflammation is by extension downward from the upper respiratory passages. In some instances the process seems to attack the different divisions of the respiratory tract simultaneously, so that it may not be so apparent that it began in the nasal cavities first; but even in these cases careful investigation will show that there always seems to be an intimate association of sensibility between all parts of the respiratory tract, which points strongly to a specific nervous interconnection between them which is both sensory and motor, and which has a great deal to do with the genesis of the catarrhal process.

Thus the history of many of the worst cases of bronchitis is often so uniform in beginning with sneezing, then sore throat, then hoarseness, and then cough, that both we and the laity concur in saying that the origin of the whole trouble was from catching a cold. But what is a cold? This question sadly needs a fuller answer than by giving it a technical name and calling it a catarrhal inflammation due to exposure, for from just the same exposure one can catch cold in his pleura or in his deltoid muscle, and neither of these can properly be termed catarrhal inflammation. A "cold," instead, is a multiform disease, or true pathological entity, with laws and processes of its own. For though a cold usually induces inflammation, it is not identical with inflammation any more than a burn is the same thing with inflammation, though it always causes it.

Taken in the order of their development, the sequence of clinical phenomena in this common and really specific

malady indicate clearly a cutaneous area of origin. A chill of some surface expanse of the body, usually when in a wet condition, is the first antecedent in the whole process, and evidently has such a causative relation to the whole process that only the exigencies of some preconceived theory would ever lead one to deny it. For the important factor about a "cold" is that it is far oftener due to a very limited than to an extensive exposure of the surface to cold. Some writers seem to entertain a vague conception of a chill of the surface being a cause of internal inflammations only when it has been prolonged or extreme in degree, and hence do not credit the statements of patients that their trouble began with catching cold unless they could show that they had been out in much wind or rain. But the truth is that the case is usually the reverse, for the more the whole body has been exposed the less likely are the resulting symptoms those of a catarrhal inflammation. Cold affecting the entire surface operates as a strong irritant, against which the body reacts, as Marcet has demonstrated, by quickening all the processes of metabolism, causing a rapid increase in the carbonic acid exhaled and in the urea excreted. This may be one explanation of the initial rise of temperature when the body is immersed in a cold bath. But these apparently chemical results of a general exposure to cold are totally unlike the effects of a partial exposure, as these produce the derangement which we term "a cold." A draught of air from a car window upon a few square inches on the back of the neck, or sitting with wet shoes, is often as plainly connected with an attack of bronchitis as an attack of diarrhœa is with eating unripe fruit. The sequence is altogether too constant for any one, however disposed to entertain microbic or other theories about bronchitis, to venture himself to sit with soaking stockings for an hour anywhere, no matter how well protected the rest of him might be. Moreover, he does not know what he may not "catch" other than bronchitis by so doing if he does not catch it. That will depend upon particular susceptibilities of his internal organs to partial external chill, and which are dependent upon certain nervous conditions of his own. Thus, getting the feet wet by a patient with an irritable stricture of the urethra or an enlarged prostate means immediate urinary disturbance. Another, with chronic diarrhœa, has to wear a flannel bandage around the abdomen whenever the weather is cold or rainy. But, however varied the results of limited external chill may be in different persons, they all alike point to a genesis which can not be explained except by reference to the nervous mechanism of the body.

Our knowledge of this important subject of pathology is very imperfect, but we already know a number of facts about the relation of the cutaneous, sensory, and vaso-motor nerves to the circulation and nutrition of internal organs which can not be without some bearing upon this great practical question, what a cold is. Thus, organs which are in *symmetrical* pairs—such as the two hands, the two eyes, etc.—are closely associated in their vaso-motor nerves. If one hand is plunged into ice water, a thermometer in the other hand will register a fall of from five to ten degrees, while a thermometer in the axilla remains unaffected. I have used this fact in checking hæmorrhage from a gun-shot wound in the palm by putting the other hand into ice water. We know how injury to one eye may excite very serious inflammation in its fellow. If the translucent ear of a rabbit is pinched, the arteries of the other ear, which before could be well seen and pulsating, will at once become invisible. Fortunately, the pair organs which are not symmetrical, such as the lungs and the kidneys, do not show this intimate neuro-vascular association, or else every attack of pneumonia might be fatal. But there are distinct special associations as well. Thus, cold to the nape of the neck acts upon the blood-vessels of the nose to check a free flow in epistaxis, while it has no effect whatever upon a bleeding tooth socket, because the nervous connection here belongs only to the respiratory tract.

By far the most important law of vaso-motor association, however, and one in which much progress has lately been made, is that the cutaneous sensory nerves are always in close relation with the vaso-motor nerves controlling the blood-vessels of the viscera under that particular area of the skin. While, therefore, there is little or no anatomical connection between the blood-vessels of the skin and those of the internal organs, the nervous association is so intimate that the identical impression upon the circulation of the surface is reflected upon the circulation of the parts which underlie it. Thus the stimulant impression of a mustard cataplasm to the præcordium stimulates the heart as well, while the sedative impression of a poultice with anodynes acts likewise as an internal sedative in pericarditis. The more decided and sudden the nervous impression is, the more pronounced the internal result. Thus, years ago, in a critical case I found a dash of ether spray on the abdomen to at once arrest a post-partum hæmorrhage after the previous application of ice cloths had failed. In fact, the entire *rationale* of external remedial measures depends upon this wide-reaching law. Topical bloodletting we know to be a very effective vascular sedative; but surely the great relief to the headache of meningitis by a couple of leeches to the mastoid process, or the marked mitigation of dyspnœa in an aortic aneurysm by a single leech to the notch of the manubrium sterni, or the arrest of the vomiting of acute gastritis by two or three leeches to the epigastrium, are not to be explained by the insignificant amount of blood which has been thus abstracted.

We have, therefore, in disease only an exaggerated or perverted development of normal physiological relations, when we note internal derangements following so closely upon abnormal or irritant external impressions. For repeatedly in morbid states we find the internal and external association heightened in both directions. Inflammatory irritation within invariably produces a hyperæsthesia of the associated cutaneous nerves. The sensitiveness of the skin over a localized pleurisy at the apex in phthisis can be put to diagnostic use when we find that laying a cold hand on the chest makes the patient give a cough if it is laid on the affected side but not on the other. Whoever has suffered from a severe cold in the head for a few days knows that he can then tell that an open door downstairs is

letting a cold draught into the house when nobody else feels it.

The subject of cutaneous reflex pains from internal affections has recently been worked out by Dr. Mackenzie and Dr. Head, of London, with some most unexpected and extraordinary results. I have myself corroborated some of their observations by finding exquisitely tender points in the epigastrium, at the angle of the seventh rib, and at the back, in ulcer of the stomach, and the same at the tip of the twelfth rib in renal calculus, when the characteristic pain is elicited by the light touch of the head, and not the point, of a pin.

But I have adduced enough considerations to show that when catarrhal inflammations attack by preference certain mucous membranes and not others, and, moreover, that such inflammations are clinically related by undoubted sequence to purely localized external irritations, like the specifically irritant impression of cold, we need not be now at a total loss for an explanation of what we mean by the term "a cold," or a bronchitis caused by "catching cold." A cold, in other words, I would define as a circulatory and nutritive disturbance of an internal viscus or tissue, produced in the first instance by a reflex irritation from a cutaneous area with which the affected internal part is in nervous association. Other things may follow, such as bacterial infection of the deranged mucous membrane, as in diphtheria, or by the pneumococcus; but these constitute no causative element in the process, and are as accidental as the infection of a wound of the skin by the micro-organism of erysipelas.

We now come to the local accompaniments of such a catarrhal inflammation as an acute bronchitis. It is plain that from the first stage of hyperæmia, then swelling, and then secretion, we meet with processes wholly correlated to inflammatory processes in other parts of the body. The catarrhal secretion is the same in essentials with the interstitial œdema of solid tissues, only here it escapes on a free surface. With one form of acute bronchitis we have a very viscid secretion, just as we have a hard, indurating infiltration in some internal inflammations, or a dry, plastic exudation on a serous membrane. In other instances we have a very liquid secretion, as when consecutive to Bright's disease, or in the passive congestion of senile heart cases; but just such modifications of the exudate would in such patients accompany the inflammatory process elsewhere than in the bronchi.

But here the parallel stops. That physician would be seriously mistaken who in a case of severe bronchitis thought that he was dealing with a catarrhal inflammation and with nothing more. Instead of that, both the function, and the structure for that function, of the bronchial tubes make the nature of the inflammatory secretion, and the locality of that secretion, assume an importance quite their own. An inflammatory œdema under the skin, however extensive, may be allowed to run its course. An insignificant swelling in the larynx is a totally different matter, not pathologically but practically. But so, also, is the mechanical element, so to speak, one of the first importance in bronchitis. Whenever bronchitis becomes dangerous it becomes very dangerous, because it has reached quarters where there is no room for anything inflammatory, be it either swelling or secretion—namely, in the slender ultimate tubes. When the inflammation has reached them there commences an entirely new series of pathological processes, which give all the fatality to so called capillary bronchitis. These processes are chiefly dependent upon the mechanical effects of local obstruction, which are not different essentially from the extensive and fatal pneumonia which follows upon the plugging of a main bronchus by a foreign body which has stolen past the watchful chink of the glottis, only here in broncho-pneumonia the virtually foreign plugs are scattered through a multitude of tubules leading to lobules. The mechanism of lobular pneumonia, however, is just the same as the pneumonia following obstruction of a main bronchus. We have the same violent disturbance of the circulation in the delicate vascular tissue beyond the obstruction, causing not only exudation into the air cells, but active interstitial inflammation between them, contrasting markedly in this respect with the exclusively alveolar exudation in lobar pneumonia. This is the reason doubtless for the frequent termination of unresolved broncho-pneumonia in scattered foci of caseous change, which almost never occurs in lobar pneumonia. If the obstruction in the tubule be sudden and complete, the retained air in the lobule is soon absorbed and the lobule collapses. But curious facts, which show that collapse of whole portions of a lung may be caused by a pleuritic effusion, even when there is not enough of the effusion directly to compress the lung, prove that deficient inspiration of itself may suffice to cause pulmonary collapse, from the natural elasticity of lung tissue overcoming then the dilatation of the feeble inspiratory power. Be that as it may, a catarrhal inflammation which has passed the sentinels of cough which are stationed at the bifurcation of the first three divisions of the bronchi is an enemy who has got within the last line of defense, and a dreadful struggle for life at once ensues as we see the urgent, but too often unavailing, efforts at inspiration, until the patient finally succumbs with all the symptoms of suffocation.

Now, against this perilous extension of bronchitis, mainly due as, we have seen, to mechanical causes, Nature has provided one watchful guardian, and that is cough. It is cough which saves every one of us from danger in bronchitis, by its incessant efforts to prevent occlusion of the air tubes anywhere along their course. Such occlusion, no matter how partial or local, can never be allowed in any part of the respiratory tract, as witness the serious and widespread damage to lung tissue and function from a local narrowing of a main bronchus by the pressure of a tumor. The whole breathing apparatus, indeed, is sensitive to whatever is in the way of the ingress and egress of air, many a case of asthma, for example, being caused by a polypus in the nose. From such considerations we can understand better what cough means, and why it is one of the earliest as well as one of the latest accompaniments of bronchitis. We come, therefore, now, in conclusion, to the subject of the treatment of bronchitis, which we would say is practically bound up in the question, how to manage a cough, and to make it do what it is mainly intended to do,

in acute inflammation—namely, to prevent "capillary" bronchitis.

Cough, however, is the motor outcome of the excitation of a bulbar centre which seems to be susceptible to a greater number and variety of afferent impressions than any one nerve centre in the body. Thus it may be directly excited by disturbances within the cranium, as in the unpleasantly significant cough of some cases of basilar meningitis. Irritation of the temporo-auricular branch of the trigeminus by a foreign body in the ear, or by hardened wax, may set up a most persistent cough also. Reflex dental coughs in teething infants are of undoubted existence, for such coughs have been repeatedly observed in adults, and have been cured by the extraction of a tooth. To all such coughs I would apply the term "irritant coughs"; not only because of their number, but of the importance of at once recognizing their significance, as this so often has a direct bearing upon treatment. Thus, one of the most common of irritant coughs is from inflammation of the pleura, frequently of a most insignificant extent, and yet causing the ominous dry hack of the first stage of pulmonary tuberculosis. On the other hand, a purely pleuritic cough may be excessively violent, as in some cases of general plastic exudation remaining after the absorption of a liquid effusion. The cough of thoracic aneurysm and the cough of cardiac origin in mitral stenosis are further examples of the kind. In the abdomen we have the annoying cough often present in hepatitis from irritation of the expanse of the phrenic nerve on the under surface of the diaphragm. Reflex coughs from gastro-intestinal irritation, though their frequency was much exaggerated in former times, yet undoubtedly do occur, as every experienced physician can testify. One of the loudest of all coughs, however, occurs in women from uterine irritation, and the barking, so-called hysterical cough is familiar to every one.

Now, every one of these coughs is purely useless, and many of them are quite mischievous. The only true function of cough is to clear away some material other than air from the respiratory passages. But the practical importance of recognizing the presence of an irritant cough is that, besides all these instances which we have adduced, this purely useless and irritant cough is also present in every case of bronchitis, and in proportion to its degree is an undoubted complication of the inflammation. An inflamed part always calls for rest as a remedy, and these useless coughs only tend to increase the pain and the congestion and thus the extension of the inflammation. They should be made as far as possible to give way to a very different cough from any form of irritant cough whatever, both in the nature of the process itself and in the result—namely, the expectorant cough.

The expectorant cough has certain characters which, by a little practice, we can learn to recognize without any difficulty, and as this is a matter of much practical importance I would point out, first, that every irritant cough, no matter what its origin, whether in the respiratory tract itself or outside of it, always consists of separate sounds which are not linked together. They rather consist of a series of hacks, like the separate sounds of the blows of a hammer, which, however loud or repeated, yet remain separate sounds. An expectorant cough, on the other hand, invariably consists of closely linked sounds, each act of the cough being joined to that which precedes and that which follows it, and which continue in a connected chain until the cough terminates with an expectoration into the pharynx. Moreover, for reasons which will soon be stated, an expectorant cough can not be stopped when once it is started until it ends in expectoration; an irritant cough, on the other hand, can be suspended by an act of the will, for a time at least.

The sound of a cough, therefore, is a matter of considerable practical importance, of which I beg leave to cite two illustrative instances.

I was once called in consultation by two physicians in Jersey City to a patient who, in the course of a pleurisy, was attacked with a violent incessant cough which prevented all sleep at night, notwithstanding the liberal administration of opiates, chloral, and other hypnotics. As soon as I heard the patient cough I told my friends that the expectorant mixtures he was taking would little help him, as the sound of his cough did not indicate that he had anything to expectorate. Auscultation revealed the presence of very extensive creaking, rubbing sounds caused by quantities of plastic exudation left behind after the absorption of the liquid effusion. Firm strapping of the whole affected side relieved at once both his pain and his cough, and enabled him to sleep that night without an anodyne. On another occasion, while I was talking to a medical friend in my consulting room, we heard some one in the adjoining waiting room coughing in a very loud and convulsive manner. "I do not know," I remarked, "who that person is, but I am sure that her cough has nothing to do with her lungs or bronchial tubes." She proved to be a lady sent by a physician from the country with the statement that she had consulted several physicians for a severe cough, now of more than four years' duration, without any satisfactory diagnosis having yet been made. As I expected, nothing was found in the chest or throat to account for her repeated paroxysms of typical irritant coughs, but a vaginal examination revealed the presence of a large polypus protruding from the os uteri, and the removal of this, along with subsequent local treatment, cured the cough.

On the other hand, the reason that an expectorant cough can hardly be checked was shown by the researches of Kohts.

He found that excitation of the pharynx in animals caused cough at once, which, as the electrode approached the sides of the glottis, became so violent that if continued it produced convulsions. The larynx and trachea, on the other hand, seemed relatively insensitive, but at the first division of the bronchi actual cough was again excited. Beyond this, again, the bronchial mucous membrane was less sensitive until the second division of the bronchi was reached, when another coughing area was found, though less sensitive than at the first division. Lastly, irritation at the third division awakened cough, but beyond this no cough could be excited. Fluids, therefore, for expectoration are propelled from one excitable point to the other, but

may remain for some time in the spaces between, so long as cough does not take place. Once started by coughing, however, and as each excitable area gives rise anew to a cough, we thus have the explanation of the successive connected sounds of the expectorant cough, which do not stop until the secretion is well past the last station in the throat.

Meantime, in all conditions of inflammation of the bronchial tract we have irritation at many points, from the pharynx down, which excite an irritant cough without any secretion being there to remove. I always listen, therefore, to a patient's cough sounds in bronchitis to judge how much there is of the purely irritant element in his cough, for by just so much it must be suppressed, as both useless and harmful.

The expectorant cough, on the other hand, should be promoted as much as possible and never suppressed. Practically the great indication for this purpose is to make the secretion in the bronchial tubes as fluid as possible. We have a most instructive illustration of this principle in the easy expectoration of hæmoptysis. Often the blood wells up in the bronchial hæmorrhage of phthisical patients so easily, and with nothing at first but a slight tickling in the throat and then a slight expectorating effort, that the patients frequently doubt that they coughed it up at all, and think that it came from the stomach. The hard, racking, expectorant cough of bronchitis is therefore a purely mechanical result of the viscid nature of the secretion, and it is very noteworthy how often all the signs of progressive inflammation subside when we have succeeded in changing the secretion from an adhesive into a freely flowing liquid. I have been asked whether an acute bronchitis can be aborted, and I answer that I am in the habit of doing it constantly by means which make the inflammatory exudate run as easily on the mucous membrane as blood does.

For this particular purpose I believe that the administration of oils is followed by more certain results than from any other substances whatever. The first effect of the contact of an oil upon a mucous membrane is to cause an immediate and profuse watery flow. Let any one inject ten drops of olive oil into his nostril and he will not doubt that fact afterward. This primary result of oils is to relieve the local hyperæmia in inflammatory conditions, of which we have a very good illustration in the treatment of ordinary dysentery by small doses of castor oil. I have no doubt, also, that the benefit of cod-liver oil in phthisis is partly due to its good effect, as an oil, upon the cough. Oils, however, have a very selective action upon different mucous membranes, some affecting the secretions of certain mucous surfaces much more than others. For more than twenty years I have employed an emulsion of linseed oil as the expectorant for acute bronchitis, having been first led to do so by noting how frequently the domestic flaxseed tea was really more than a mere nurse's remedy. It is an oil of which a very unobjectionable emulsion can be made, and since my original advocacy of it, it seems now to be coming into quite general use. At least the notes which I have taken of its action, compared with the action of other reputed expectorants of which I have given a full trial for test purposes, lead me to pronounce it much superior to either the preparations of ammonia or other reputed liquefiers of too viscid mucus.*

The presence of the irritant cough, however, mixed with the expectorant cough, and complicating it, calls for its suppression by sedatives. This need never be pushed by any intelligent physician to the extent of weakening expectoration. The addition of such agents is, however, a matter of a good deal of choice. Whenever there is inflammatory pain opium is the proper anodyne, no matter where the inflammation is; but in bronchitis the smaller the effective dose the better. On the other hand, the cough irritability is as well affected by chloral as by opium, and hence in acute bronchitis I begin with the linseed emulsion, to which a small dose of morphine (not more than the tenth of a grain) and eight grains of chloral are added. In cases, however, in which there is more cough than either pain or secretion, a condition frequently present in influenza coughs, where we doubt if the reflex nervous irritation is not present to a much greater degree than catarrhal inflammation, I find a combination of fifteen grains of the ammonium bromide with eight to ten of chloral often answer every purpose.

I would sum up the treatment of acute bronchitis thus: If called early, during the stage of simple hyperæmia, you may find the patient quite dusky, with much dyspnœa, and a husky, dry, irritant cough—symptoms, in short, of a tumefaction of the bronchial membrane, with much the same condition in his larynx. At this stage an active counter impression to the surface of the chest, taking the place of the original external irritant which induced the internal disorder, may be of great service. A teaspoonful of red pepper to a pint of boiling water makes a much better and safer application to use on a flannel which encircles the chest than a sinapism does. At the same time, the dyspnœa is very quickly relieved by starting secretion from the dry, swollen bronchial membrane itself, and for this I prefer one grain of tartar emetic in a teacupful of water, one spoonful to be taken every ten minutes till the patient feels a little nausea, when his tightness and asthmatic wheezing will quickly vanish.

Nauseating expectorants, such as the preparations of ipecacuanha, squills, senega, etc., I believe have their place in the treatment of this earliest condition in some cases of bronchitis; but beyond that stage I can not concur in their value.

When we come to "capillary" bronchitis, however, all our indications for treatment necessarily change. The frequency of this condition in children and its rarity in adults is what we should expect from its mechanical origin primarily, and therefore so liable to occur in those little patients with their deficient powers of expectoration. I need

* A serviceable formula for making an emulsion of linseed oil is: ℞ Irish moss, ʒ ijss.; water, Oj. Boil and strain, then add linseed oil' ʒ v; glycerin, ʒ j ʒ v; syr. simpl., ʒ iij; ol. gaultheriæ, ol. cinnamomi, āā ♏ xl; acid. hydrocyan. dil., ♏ xl.

For bronchitis with irritant cough, for an adult: ℞ Emuls. ol. lini., ʒ vj; morphinæ sulph., gr. j; chloral, ʒ jss. M.

Dose, a tablespoonful an hour after meals.

not to such an audience as this repeat why we use emetics now, certainly not because they are expectorants, but rather intending by the mechanical act of vomiting to dislodge a portion of the obstructing secretions. We must, however, by all means direct our efforts now to maintain the force of the heart. Brief and quick applications of the red pepper infusion often rouse the failing organ. But one of the most serviceable means, which has stood me in very good stead, is taking advantage of the physiological relation between the act of swallowing and the act of expectoration. Repeatedly we see in adults with phthisis the benefit of sipping hot fluids to ease their morning expectoration. The experiments of Kronecker and Meltzer prove that this result comes about mainly by stimulation of the heart with each act of deglutition. I have thus sat up all night with an apparently dying infant and given it half a teaspoonful of hot milk and limewater to swallow every few minutes, and found the flickering pulse improve as long as this assiduity was maintained, until finally a turn for the better became decided.

I see no reason, however, why we should not try to combat the pulmonary collapse by gentle artificial respiration from time to time. For this purpose I would recommend Sylvester's method, which, I think, has in some instances of mine been crowned with success.

SOME REMARKS UPON A YEAR'S WORK IN APPENDICITIS.

By J. H. CARSTENS, M.D.,

DETROIT,
EX-PRESIDENT OF THE
AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNÆCOLOGISTS;
PROFESSOR OF OBSTETRICS AND CLINICAL GYNÆCOLOGY
IN THE DETROIT COLLEGE OF MEDICINE;
CHIEF OF STAFF AND GYNÆCOLOGIST TO HARPER HOSPITAL, ETC.

When we consider that a few years ago the word "appendicitis" had not even been coined, and if we then think how physicians can report a great number of cases and many operations, we get a general idea of the wonderful progress of medicine. My fossil friends in the profession say appendicitis is a great fad. They ask, "How is it you see so many cases? We so seldom see them." Still, it is very easy.

If you will think for a moment that my cases come to me from a radius of hundreds of miles, and nearly all sent to me by physicians whose combined practice represents a million population, and if you average it, there are not so many cases of appendicitis. At the Harper Hospital last year we had thirty-one cases; every hospital in the city has had a number. A good many patients have recovered without going to the hospital, some even not recognized. From the best information I can get, it seems to me there occurred in this city alone about one hundred cases of appendicitis—certainly not more than one hundred and fifty—giving about one case to every two thousand of the population. The physician who has two hundred families (that would be about seven hundred people to treat) has a pretty good practice; hence, the physician with a fair practice would see a case of appendicitis about once in three years (this general average may be too high or too low, but I think I am pretty near to it), so that my friend the general practitioner is perfectly right when he says appendicitis is not a very common disease; while the abdominal surgeon is also correct when he talks and reads about it a great deal, as he sees a great many cases comparatively.

This disease was formerly seldom recognized; it was said that a patient died of peritonitis; but by his attention having been called to it repeatedly the general practitioner is now aroused, is constantly on the lookout for it, and finds appendicitis where formerly he would not have suspected it.

Another point about this disease is that some general practitioners maintain that it is a mild one and easily subsides with simple treatment—such as with opium, ice bags, and hot poultices—and I have had physicians tell me that they had had eight or ten patients all recover, or perhaps only one die in fifteen to twenty cases, and that I, as an operator, could show no such record. I do not get the easy cases. I get them when medical treatment has failed. Even when they are *in articulo mortis*, I find I am expected to do magic. What we maintain is that all patients with appendicitis should be seen by the surgeon jointly with the family physician, and as a rule operated upon; although a very small percentage will have only one attack, the vast majority (from my experience I should say from eighty-five to ninety per cent.) will have recurring attacks, and during the second, third, or tenth attack rupture will take place and the patient will die, not to say anything about the pain and suffering he has to undergo in the meantime.

All cases of peritonitis not due to puerperal or pelvic diseases in women are caused by appendicitis, except four per cent., which are due to perforation of the bowels caused by ulceration and malignant growths, etc. During the year 1895 I operated in seventeen cases of appendicitis. In these seventeen cases there had been altogether forty-six different attacks. Some of these attacks were mild and some were severe. Some of the patients were repeatedly confined to bed for from six to twelve weeks. They were suffering from septicæmia and hence were invalids.

My cases were as follows:

Case I.—Mr. M. R., aged thirty-three years (kindly directed to me by Dr. Galbraith, of Pontiac). The patient had had four attacks, some of them being quite severe. I operated on him January 2, 1895, at Harper Hospital. He was free from acute symptoms. I dissected the peritoneal covering, sewed it over the stump, and closed the abdominal incision in layers, using kangaroo-tendon sutures throughout. He made an uninterrupted recovery.

Case II.—Miss M., of Ontario, aged twenty-two years (kindly sent to me by Dr. Mulhern). She had had three attacks. She seemed in very good health, but, when the abdomen was opened at Harper Hospital, I found that she had tuberculous peritonitis—something I had not expected. I removed the appendix and washed out the abdomen with bichloride solution. I sewed the incision with *en masse* suture of silkworm gut. What connection there was between the tuberculous condition and appendicitis I do not know. The patient has entirely recovered.

Case III.—Mrs. C., aged twenty-five years (kindly sent to me by Dr. Aaron). Six attacks; also had chronic tubal disease. Operation at Grace Hospital. Appendix removed with the

ovaries and tubes, one tube being a beautiful specimen of hydrosalpinx four inches in diameter. Recovery "smooth," as the Germans say.

Case IV.—Miss A., of Lansing, aged twenty-five years (kindly directed to me by Dr. Gannung). She had had six attacks. During some of these she was confined to bed for three to four months. I operated on her, May 18th, at Harper Hospital during the quiescent stage. Used kangaroo-tendon suture. She made an ideal recovery.

Case V.—Mr. W., of this city, aged eighteen years. Called by Dr. Schulte to see him on Sunday afternoon. This patient had been sick for forty-eight hours and had a temperature of 103° F. Careful investigation showed that he had had a slight attack some months before. I had him immediately removed to Harper Hospital, and operated on him the same day, May 26th. Perforation had taken place and the appendix was removed. Gauze drain used, and the wound closed with *en masse* suture of silkworm gut.

Case VI.—Mrs. L., aged twenty-one years (directed to me by Dr. Moran, of this city). She had had four attacks Agreed to come to Harper Hospital on Wednesday to be operated upon. On Tuesday afternoon she was taken with another attack. I immediately had her removed in the ambulance to Harper Hospital, where I operated on her, May 28th. The appendix was club-shaped and apparently upon the point of rupturing. It was removed and the wound closed with buried kangaroo-tendon suture. She made an ideal recovery.

Case VII.—Miss H., aged ten years. Kindly called by Dr. Hastie to see this little girl. She was taken with appendicitis, properly diagnosticated by the doctor, but it seemed to be a very mild attack and the symptoms had all subsided, so that she was thought to be well. But on the eighth day the fever rose to 101°; ninth day, 102°; and the tenth day, 103°. The swelling of the right inguinal region increased in the same proportion. I had her transferred at once in an ambulance to Harper Hospital, where I performed the operation immediately. The abscess was opened and drained, but the appendix was not removed, as I thought it had sloughed off. The patient made a good recovery, and has been perfectly well ever since.

Case VIII.—Mr. J. B., of Grosse Point, aged thirty-six years. Kindly directed to me by Dr. J. Bennett. I saw him during the acute stage of the second attack, but as he was on the mend did not operate. He recovered sufficiently to be out, but always complained of pain in the region of the appendix. I saw him again and urged an operation, but as he did not seem very sick he postponed it from week to week. Finally he became frightened and went to St. Mary's Hospital, where I operated on him, July 1st. I found he had relapsing appendicitis. Removed the appendix and used gauze drain, closing the wound with silkworm-gut sutures. He made a good recovery.

Case IX.—Mrs. W., aged thirty-five years. Seen by request with Dr. Schell. This patient I had operated on three months previously for salpingo-oophoritis. Immediately after the operation she had symptoms of appendicitis, but these soon subsided and she seemed perfectly well. Six weeks later, however, she again began ailing, and was confined to her bed, becoming weaker and weaker. She had quite a fever; temperature, 103°; pulse, 130. The pain was excruciating in the region of the appendix. I had her removed in an ambulance to Harper Hospital, and operated on her on July 2d. I found the appendix much inflamed and adherent. I removed it, but also found a small cheesy abscess of about the size of a bean buried in the right broad ligament. It has always been a question to my mind if that was not the cause of the fever. Unfortunately, I had no bacteriological examination made. Subcutaneous saline infusion was performed during the operation, as she was very weak. She thoroughly recovered without a bad symptom.

Case X.—Mr. M. A., aged forty years. Kindly sent to me by Dr. Shorr. He had had appendicitis for three days, and this was apparently his first attack. I had him removed to St. Mary's Hospital, and operated on him on August 3d. The appendix was gangrenous. Used gauze drain and silkworm-gut sutures. But after the operation he was taken with symptoms of delirium tremens, and died within forty-eight hours, suddenly, of heart failure.

Case XI.—Minnie S., aged two years and a half, of Fowlerville. Kindly called out there by Dr. Austin. This little girl had had four or five attacks, properly diagnosticated by the doctor as appendicitis. I found the appendix ruptured and gangrenous. Operated September 16th, using gauze drain and silkworm-gut sutures. She made an excellent recovery.

Case XII.—Mr. C., aged thirty-five years, of Tecumseh Dr. North called me there to operate for appendicitis. I found the diagnosis correct, and removed the ruptured appendix, September 12th. Used gauze drain and silkworm-gut sutures. This patient also made an excellent recovery.

Case XIII.—Mr. O., aged fifty years. Called to see this patient by Dr. Bonning. This man weighed two hundred and fifty pounds and was formerly a heavy drinker. The first attack of the disease and of forty-eight hours' duration. Appendix was gangrenous; considerable general peritonitis. Operated on September 14th, using gauze drain and silkworm-gut sutures. He died of sepsis three days afterward.

Case XIV.—Mrs. M., aged thirty-four years, of Fowlerville. Kindly asked to come out there by Dr. Austin and operate on this patient, who had had four or five mild attacks of appendicitis. Found the appendix unruptured. I operated on September 30th, using kangaroo-tendon sutures. She made a good recovery.

Case XV.—Mr. C., aged thirty-four years. Dr. Goodwin asked me to see this patient. He had been suffering for five days with symptoms of obstruction of the bowels. I diagnosticated appendicitis and had him removed to Harper Hospital. I operated on him on October 30th. The appendix was twisted around the cæcum in such a way that it caused obstruction of the bowels. Vomited constantly for five days. Although he had a passage from the bowels after the operation, he remained weak and unable to take any nourishment. He died on the sixth day, of debility. His temperature was only 99°.

Case XVI.—Mrs. L., aged thirty-one years. Kindly sent to me by Dr. Willson, of Port Huron. She had had a number of slight attacks of appendicitis, and a long time before severe pelvic inflammation. I agreed to remove at the same time the tubes and ovaries, if necessary and possible. The appendix was very much inflamed and adherent, and the ovaries and tubes were buried in a mass of adhesions. I removed both, using kangaroo-tendon suture throughout.

Case XVII.—Mrs. F., aged thirty-eight years. This patient had had two attacks of appendicitis. After the last attack she agreed to have an operation. While I was out of the city, on November 19th, she was taken with another attack, and, becoming very much frightened, she immediately went to Harper Hospital, where I found her, late at night after my return. I had her prepared, and operated on November 20th. Used kangaroo-tendon suture. She recovered.

Case No.		Number of attacks.	STAGE.	
			Acute.	Quiescent.
1	Mr. R.	4	0	1
2	Miss M.	2	0	1
3	Mrs. C.	3	0	1
4	Miss A.	6	0	1
5	Mr. W.	2	1	0
6	Mrs. L.	5	0	1
7	Miss H.	1	1	0
8	Mr. B.	3	1	0
9	Mrs. W.	1	0	1
10	Mr. P.	1	1	0
11	Mary S.	4	1	0
12	Mr. C.	2	1	0
13	Mr. O.	1	1	0
14	Mrs. M.	4	0	1
15	Mrs. L.	3	1	0
16	Mr. C.	1	1	0
17	Mrs. F.	3	0	1
	Totals	46	9	8

These seventeen cases represent forty-six different attacks, leaving twenty-nine attacks which were treated on general principles, without a death, so that the general practitioner can say he had twenty-nine cases without a death, while I had seventeen cases with three deaths. But if I should add to this list the cases I have seen during the year in consultation, in which an operation was not performed and the patients died, I could give the general practitioner, as the boys say, "double discount."

If in the light of our present knowledge we take one hundred consecutive cases, and have the patients treated by constitutional and local medications, how many do you think would die? Then take one hundred consecutive cases of operation within twenty-four hours, or as soon as the diagnosis is made, in how many of this class of cases would the patients die?

All men of experience will to-day admit that in the first class of cases four times as many patients would die; and then I will admit that unquestionably, of the surgical cases, ten or fifteen per cent. of patients will be operated upon who would have recovered permanently and without recurrence if no operation had been performed.

If surgical treatment shows the best results, that is the correct plan. To sum up, I should say: 1. Excluding the pelvic peritonitis of women and traumatic cases, peritonitis is always appendicitis. 2. Appendicitis is a surgical disease. 3. An immediate operation will give the best results.

620 Woodward Avenue.

The New York Orthopædic Dispensary and Hospital has received during the past week two very important and valuable gifts—one, from a trustee of the institution, of a complete Röntgen ray outfit; the other, "from a friend," a gift of $6,000, an addition to the building fund made necessary by the recently proposed and extensive improvements now being made.

The International Periodical Congress of Gynæcology and Obstetrics.—Dr. Charles A. L. Reed, of Cincinnati, has been selected by the European committee on organization as honorary president of the meeting of that body to be held in Geneva, Switzerland, during the first week in September of this year.

THEORY AND PRACTICE OF THE COUNTER-ENVIRONMENTAL TREATMENT OF PULMONARY TUBERCULOSIS.*

By W. J. McDOWELL, M. D.,
PRESIDENT OF THE BALTIMORE MEDICAL AND SURGICAL SOCIETY, 1878, ETC.

Ever since the identification of the *Bacillus tuberculosis* by Koch, and its recognition by the profession at large as the prime ætiological factor in all forms of tubercular disease wherever located, the opinion has been commonly entertained that all that is necessary to initiate active tuberculous disease is for the bacilli to effect ingress into the system by any avenue, and then, if certain undefined or badly defined conditions and predispositions are present, constitutional infection will follow in due course of time. This view is seemingly favored by the fact that tuberculosis can be very easily produced experimentally in certain animals by simply injecting cultures of the bacillus, preferably into their peritoneal sacs. But it should be remembered that a large quantity of toxines is injected at the same time which produces a constitutional disturbance identical with that which would follow an injection of a corresponding amount of tuberculin, which, as I shall show later on in this article, is favorable to the growth and development of this form of germ life. I can not but believe that if it were possible to introduce these germs, minus toxines of every kind and all other extraneous irritants, the proportion of successful inoculations would be appreciably smaller.

Now, I do not wish to be understood as attempting to minimize the part played by the bacillus in the production of tuberculosis. It certainly is the germ proper of the disease, the seed which, when sown under certain favorable circumstances, is sure to spring up and bring forth its deadly crop; but no seed of any kind has ever yet grown, fructified, and reproduced its kind without the assistance of a favorable environment. It is a mistake, therefore, to regard the bacillus as the one *sole* cause of tuberculosis, because *the co-operative and, I may say, coequal factor of germ environment has as important a causative relation to the disease as the presence of the micro-organism itself.* It is therefore just as necessary for us, as therapeutists, to understand as perfectly as possible all of these important ætiological factors, and the several rôles played by each in the establishment of the tuberculous process, as it is to comprehend that of the bacillus; for it is only by taking into account all of the causal elements, weighing their relative values, and ascertaining as nearly as possible the *modus operandi* of each, that we can hope to construct a rational, scientific, and successful system of treatment.

If it is admitted on general principles that in order to effect a lodgment in the system the bacillus must find a suitable environment, then it follows that its subsequent life history—as to the question of whether it will luxuriate or languish—must depend upon the continuance or failure of that environment, and that its future well-being must remain constantly subject to environmental fluctuation.

* Read before the Baltimore Medical and Surgical Society, November, 1893.

Again, if it is true that the most perfect, the most highly vitalized, and therefore the most virulent and fertile germs are those which have been produced in an ideally favorable environment, then the converse of the proposition must be equally true, that those which are produced in a partially unfavorable environment must be proportionally imperfect, of low vitality and unfertility; so that an unfavorable environment is not only pernicious to the present crops of microbes, but equally damaging to the future growth by adversely affecting their reproductive powers. Now, if these premises are correct, they are highly suggestive, for they seem to indicate the essential unity of all forms of tuberculosis, and to justify the belief that all the variations presented in the clinical manifestations of the different types of the disease are entirely due to corresponding differences in the extent and vigor of the bacillary vegetation, which are in their turn governed by the peculiarities of germ environment in each individual case. If, then, it is the matter of germ environment alone which determines whether a newly infected individual shall be affected with acute caseous phthisis on the one hand or with chronic fibroid phthisis on the other, then the possibility of our converting a case of the former variety into one of the latter, could we exercise a controlling influence upon germ environment by therapeutic expedients, at once suggests itself. And if this much can be done, would it not be possible to go a step farther and effect a positive cure? For if we can gain a proper knowledge of the laws governing bacillary growth, and thoroughly ascertain the conditions under which only they can at first invade and afterward maintain themselves in the system, then it certainly follows that the more nearly we can approach by therapeutic means to the exact reversal of these conditions, the nearer we shall have attained to an ideal system of cure. Let us then examine the process of tuberculous infection, discover if possible all the conditions that favor the growth and development of the bacillus, and ascertain the particular manner in which each ingredient contributes to establish the environment most favorable to this microphyte.

In the first place, it is evident that the vitality, virulence, and fertility of the bacillus must be in direct ratio to corresponding qualities in the parent germ, and that just in proportion to the degree in which these qualities are possessed are its chances of successful invasion enhanced and its potentiality of after mischief increased. The first element, then, in the group of conditions favorable to bacillary growth is found in high vitality and fertility of the germ.

It is a fact that has been known and recognized as long as the disease—consumption—has been known, that certain individuals and certain families are peculiarly liable to its ravages, and hence, up to within very late years, the belief almost universally prevailed among physicians that the disease itself was hereditary, in the sense that some peculiar and specific *materies morbi* is transmitted from parent to offspring, which, after remaining dormant in the system for many years, suddenly awakens to malign activity through the operation of some unknown accidental or natural cause. Now, it is true that the disease is sometimes transmitted *in utero* by a tuberculous mother to her child, for the bacilli have been found, although rarely, in the tissues of the embryo; moreover, the clinical manifestations of their presence are sometimes observed in very young children, but there is no satisfactory evidence that these may lie in the system for many years, even to an advanced period of life, in a state of innocuousness and then become pathologically active. On the contrary, the weight of evidence seems to establish the view that where these organisms are so transmitted, they either set up active disease within a very short time or else they fall victims to the germ-destroying functions of the body they inhabit. But, while the disease is not hereditary in the strictest construction of the term, nevertheless we know that a susceptibility to it is hereditary. It therefore becomes a matter of prime importance for us to learn everything possible in regard to the cause or causes of this inherited, or rather congenital, susceptibility to tuberculosis, in order that we may arrive at a juster appreciation of the true pathogenesis of the disease. For if it is true, as it must be true, that bacillary growth is dependent on bacillary environment, then a study of hereditary predisposition ought to shed light upon the subject of environmental conditions.

Strictly speaking, every human being is theoretically susceptible to tuberculous infection, and as this is true of us all from the moment of birth, it is fair to assume a theoretical congenital susceptibility in all. But there are many constitutions that also possess a wonderful power of resistance to tuberculous infection, and in these, when by any chance the disease is established, it pursues a very slow and chronic course, and oftentimes ends spontaneously, cure being effected by the unaided *vis medicatrix naturæ*. Cases of this kind afford examples of *minimum congenital susceptibility*.

There exists also the opposite and too numerous class of cases in which the disease is most easily provoked, and when once alight will continue to rage like a fierce conflagration until all be consumed, and that despite all Nature's efforts to stay its progress. These cases belong to the type of *maximum congenital susceptibility*, and between these two there exists every conceivable degree of predisposition which is congenital in all. Now, as different members of a single family are likely to resemble each other in physical and mental conformation, energies, traits, and susceptibilities, we should naturally expect, and we constantly do find, *all* of these degrees of natural susceptibility to tuberculous invasion, from the greatest to the least, existing as family traits or predispositions.

Hereditary predisposition, therefore, is not a something which some possess and others do not, but is a quality shared by all. Some individuals and families possess it in an eminent degree; with a favored few it is present in so slight a degree as almost to constitute a guarantee of immunity; while in the overwhelming majority of the families of the earth it is only more or less moderately manifest.

The most generally accepted explanation of maximum susceptibility to tubercle is that in such cases there is a quantitatively deficient inheritance of protoplasmic or cellular vital energy. The individual is possessed of what has

been termed a hypotrophic constitution, his general vitality is low, and all of his tissues and organs are "structurally weak." That in such a constitution, therefore, Nature stands practically disarmed in the presence of an invasion by a hostile army, having no strong line of defensive works on which to depend, with her stock of germitoxic ammunition small in amount and poor in quality, while her leucocytic and lymphocytic police and soldiery are ill armed and weak to the point of impotency. It is not that the invaders are stronger or more numerous than in other cases, but that the means of defense are practically wanting.

This explanation has much to commend it, and it may be conceded that congenital subvitality of the tissues and organs is an important ætiological factor in so-called hereditary tuberculosis. But that it is the only one, or even the most important one, appears very doubtful when the subject is viewed in the light of clinical experience. If it were so, then all of the most acute, the most rapidly fatal cases of tuberculosis should occur in those who are so unfortunate as to have inherited this peculiar constitution or diathesis, and the liability to infection, as well as the acuteness and virulence of the disease, should be in direct proportion to the degree in which this peculiar constitutional "make-up" is present. But we find that the conditions of this postulate are *not* fulfilled in clinical experience. Every physician is familiar with cases of an entirely different type in which the influence of heredity is most strongly marked, one member of a family after another being successively stricken down; the disease is acute in character, rapid in course, and speedy in fatality. In cases of this type the individual, before infection, is apparently strong and well developed, generally of a nervo-sanguine temperament, frame well knit, muscular system well developed, circulation active, and vitality and nervous energy apparently good. Neither have the reparative powers of Nature been previously below par. He has had other diseases and has recovered from them as promptly and as thoroughly as any one else would have done. Cuts would heal for him or fractures unite as kindly and quickly as for his more fortunate friend, and yet when tuberculosis occurs with such, it is often more virulent and more rapidly fatal than when occurring in an individual of the hypotrophic constitution, for in these diathetic cases we not infrequently find the disease running the tardy and protracted course which is characteristic of chronic fibroid phthisis. Recognizing, then, that while cases of consumption occurring in hypotrophic individuals are generally prone to pursue a rapid course, they nevertheless do occasionally advance only with a tardy and halting step, and that, on the other hand, we frequently encounter cases of the most rapid and virulent sort in which no diathetic element can be traced, but in which that of heredity is even conspicuously present, we are logically compelled to look for some other hereditary influence more potent and more subtle than that of cellular subvitality, and which shall *operate in every form of the disease* as the prime ætiological factor in predisposition to tuberculosis, the mainspring which starts all the various wheels of the pathological machinery in motion, and which, by its relative activity or want of activity in any given case, will determine whether it shall pursue an acute or chronic course. This influence can be found, I believe, in *protoplasmic susceptibility to superexcitation*, or possibly a better term would be *cellular hypertaxis*; for it is this cellular hypertaxis that contains the potentiality of inflammatory reaction to chemical stimuli, and, as I shall show later on, the ingredients of the inflammatory process supply all the elements of favorable environment for the bacillus of tuberculosis. This unequal potentiality of cell excitability will not only account for all the degrees of individual susceptibility to tuberculous infection, but it will also explain the relative susceptibility of different organs and tissues to invasion, so that it is therefore the prime factor also in determining the seat of election of the disease. Moreover, I may say, in parenthesis, that, reasoning from analogy, it seems extremely probable that this same quality of cellular hypertactility to the stimuli of other forms of pathological micro-organisms may also be the determining cause of individual and tissue susceptibility to other forms of infectious disease.

Many explanations have been given to account for the peculiar liability of the pulmonary apices to tuberculous invasion, and it is somewhat remarkable that the two which have found more general acceptance are of a mechanical nature; for any mechanical explanation of a vital phenomenon, if not altogether wide of the mark, is apt to be a very partial one at best. One of these theories would make the peculiar distribution of the pulmonary artery responsible for apical vulnerability by supposing that the anatomical arrangement determines a blood supply to this region more heavily laden with bacilli than that which reaches other more highly favored areas of the pulmonary parenchyma. The other and more generally received explanation accounts for the same pathological facts by assuming that the limitation of expansion of the apices results in a suboxygenation of the blood in this locality, and a consequent lowering of the vitality in the tissues supplied by it. Just how this very slight and even doubtful local decrease in oxygen and proportional increase in carbon dioxide would act deleteriously it is difficult to understand, especially in view of the fact that artificially lowering the oxygen supply and exhibiting carbon dioxide by inhalation are measures warmly commended by certain high authorities as beneficent therapeutical expedients in the treatment of phthisis. It certainly seems that the theory of cellular hypertaxis offers a more plausible explanation of this pathological fact. Nor is it necessary to presuppose any difference in the histological structure of different portions of the lung tissue, for we have a sufficient number of pathological analogies to render this unnecessary. For example, all serous membranes possess a like histological structure, and all serous membranes are liable to rheumatic inflammation. That is to say, the cells entering into their structure are all responsive to the peculiar irritant which constitutes the *materies morbi* of rheumatism. But such membranes are *not equally* susceptible to rheumatic invasion, and hence their component cells are *not all in like degree* responsive to the same irritant, although all have been subject to the same morbific influence. Again, if the pulmonary apex is rendered more

vulnerable to the tubercle bacillus by reason of subinflation, is the vulnerability of the base of the lung to the coccus of pneumonia increased because in that situation inflation is fuller and more complete? It certainly seems more rational to suppose that, while either micro-organism may invade any part of the pulmonary tissue, each has its seat of election, and that this is determined by the relative responsive tactility of the cells in each locality to the peculiar toxine of each variety of germ. Having now taken into account two of the principal prerequisites to successful tuberculous infection—namely, fertility of the germ on the one hand, and individual and tissue susceptibility on the other—and explained at length the contributing elements in each, let us pass on to the consideration of the invasion of the system by the bacilli, and the manner in which tuberculous colonies are first planted in the tissues and afterward maintained and extended.

In the first place, it is necessary, in order that a colony be successfully planted, that the conditions for reproduction and growth be favorable—that is, there should be an elevated temperature, and nutritive pabulum in abundance to favor development; and just in proportion as both factors are present, each in its most suitable degree, will the growth be luxuriant and strong or sparse and weak. These conditions will all be found ready at hand in any tissue in which the phenomena of inflammation exist, especially if the inflamed area forms a part of the pulmonary structures. If the bacilli gain ingress by any avenue into such a locality, infection is almost certain to result, for the local heat favors the growth of the microbe, and the interstitial exudate supplies a suitable culture fluid in which growth and reproduction can go on indefinitely, provided these environmental conditions are maintained. Now, the lung substance being, when in its healthy state, possessed of a larger supply of arterialized blood than any other tissue in the body, and its metabolism being correspondingly active, inflammation in this situation ought to, and would, doubtless, terminate promptly by resolution were there not some persisting cause operating to maintain it. And this brings us to the consideration of the rôle of the bacillus; for this microbe, after being successfully planted in an area of inflamed pulmonary substance, *now reacts upon the surrounding tissues, partly, no doubt, through mechanical irritation, but chiefly chemically, by means of its irritating toxines, excites and maintains a local inflammatory reaction, and so preserves for itself the environment which is so absolutely necessary to its well-being and perpetuity.*

Moreover, the inflammatory process has further prepared the soil in advance for bacillary growth, first, by lowering the vital resistance of the affected tissues, and, secondly, what is more important still, by exalting the normal (to the individual) tactility of the tissue cells into a state of hypertactility, and it is the *innate hypertactile potentiality* of the cells that determines, in any given case, the degree of inflammatory reaction that may be provoked by the toxines of the tubercle bacillus, and the degree of inflammation so provoked determines, in its turn, whether the bacillary colony shall thrive, languish, or perish, and hence whether the disease shall prove to be acute, chronic, or abortive phthisis. Non-specific inflammation must precede the tuberculous process in the vast majority of cases, for without it to prepare the soil in advance, the seed will be sown in vain. Hence, the extreme liability to tuberculous infection of persons with chronic pneumonia, also of stonecutters, nail makers, and others in whom inflammation of the respiratory organs is excited by the constant inhalations of the irritating dust. But there are certain constitutions in which, if the febrile condition is present from any cause, and sufficiently persisting, infection and inflammation may occur simultaneously. For instance, protracted fever will supply the tubercle microbe with a partially favorable environment, for the necessary elevation of temperature is more or less continuously present, and it operates also to reduce the vital resistance of the cells, and, at the same time, to excite them to hypertaxis. Now, in such a case, if this latter potentiality is naturally present in an unusual degree, the few bacilli accidentally present in the system will be able, through the irritative properties of their toxines, to excite local reaction in the tissue most susceptible to their influence—*i. e.*, the pulmonary tissue—and so establish permanent colonization. It is theoretically possible also that there may be a third class of cases in which the innate superexcitability of the tissue cells is so great and their vitality so low that, without even the aid of a pre-existing febrile state, the bacillus may succeed in exciting inflammatory reaction and so infecting the system. But, if any such class of cases does exist, I have never seen an example of it that I could identify as such, and I strongly doubt if it has any existence at all.

In tracing the phenomena of tuberculous infection I have laid much stress on the potentiality of protoplasmic superexcitability as one of the most important ætiological factors in this disease, but its importance resides in the environmental conditions to which it contributes, all of which belong to the inflammatory process.

The principal one of these is elevation of temperature, general and local; for not only is this the *sine qua non* of germ incubation, but upon its existence depend the multiplication of the bacilli, the luxuriance of their growth, the high vital energy of the individual microbe, and hence its virulence and fecundity. Experience has shown that the temperature at which cultures of the bacilli best thrive is 38° C. (100·4° F.), and that below this point incubation and growth are progressively feebler and slower until the zero point of non-incubation is reached. *But it by no means follows that the bacillus can continue to grow and to flourish in the human system at as low a temperature as when propagated experimentally on the culture-agar of the bacteriologist, for in the former situation they are in an enemy's country, waging a continuous warfare against opposing forces, and being warred upon in return, while in the latter all their surroundings are friendly.** Bacteriological research has shed much light on this previously obscure subject and is likely to still further illumine it, but unless such distinctions are kept in view when we attempt to practically ap-

* The bacillus may be propagated under laboratory conditions at as low a temperature as 36° C. (96·8° F.).

ply the biological knowledge gained in the laboratory, we are very apt to be led to adopt erroneous conclusions by assuming parallelisms which do not exist.

The effect of body temperature upon bacillary growth can be demonstrated most conclusively by clinical proof, and clinical proof is after all the touchstone by which the gold of medical truth can be fairly tested. If any individual who is suffering from chronic fibroid phthisis unfortunately contracts some acute febrile disorder, the process of fibrosis will give way for the time at least to that of caseation, new areas of pulmonary tissue will become invaded by tubercle, the sputum, which before was principally mucous, now becomes heavy, densely purulent, and bacillus-laden, and all the other symptoms of a more acute form of phthisis will soon manifest themselves unless the pyrexia very speedily abates. This train of symptoms has been very frequently produced artificially and in a very intense degree by injections of tuberculin given sufficiently often to produce and maintain hyperpyrexia. In these cases the bacilli immediately awaken to renewed activity and virulence, their extremely irritating toxines provoke such a degree of acute inflammation in the tuberculous tissue surrounding them that much of it melts away and disappears in the suppurative process, while the bacilli now set free are taken into the system by the veins and lymphatics and carried to remote tissues and organs which promptly become infected, because in the state of hyperpyrexia all of the conditions are favorable; for there are present germs of high fertility lodged in a suitable soil, the cell irritability or tactility has been exalted by the pyrexia and toxæmia, while its vital resistance has been correspondingly lowered by the same causes. The highly toxic germs, therefore, can very readily excite a local reaction in almost any tissue, and so surround themselves with the inflammatory environment which is the necessary condition of successful infection.

On the other hand, in cases of the more acute form of the malady, in which pyrexia is a conspicuous symptom, exuberance of germ life can be checked with precision by simply lowering the temperature to a normal point, or a degree or two below (and this is often a perfectly practicable procedure), and maintaining this apyrexia for a few days. In every case so treated the sputum cup will promptly show markedly diminished expectoration, which becomes progressively less purulent and more mucous in character, while the microscope will show, despite the large reduction in the amount of sputum, a still larger relative decrease in the number of bacilli.

Now, if it can be experimentally demonstrated, as it certainly can be, that the condition of hyperpyrexia, artificially produced and maintained, will convert any case of chronic phthisis into one of a more acute form, the acuteness being in direct proportion to the intensity of the pyrexia, while the activity of germ life is in like manner proportionally increased, as shown by a microscopic examination of the sputum; and if, on the other hand, it can be experimentally demonstrated, as it can be, that the condition of apyrexia, also artificially produced and maintained, can just as certainly convert a case of any of the more acute forms of phthisis into one of a milder and slower type, with activity of germ life correspondingly and coincidently lessened, as determined also by the microscope, then we certainly possess in these facts a key to the solution of that great problem, the cure of pulmonary consumption.

When we reflect upon the great vital tenacity of the tubercle bacillus, and remember how, even when outside the body, it resists the action of strong germicidal solutions, the possibility of attacking it successfully by any such agents, administered either by inhalation or through the general circulation, is not an encouraging one, for in its remote fastnesses in the pulmonary tissue it is practically inaccessible to any such agents. But then there exists no form of life upon our planet but is susceptible to and dependent upon environmental influences, so that while the bacillus may evade or resist the action of the germicide, it remains just as susceptible to fluctuations of environment as any other living organism, and may be promptly weakened, and in the majority of cases eventually destroyed, by surrounding it with an environment that is unsuitable to it.

The *sine qua non* of the successful application of this principle in the treatment of phthisis is to reduce the temperature to the normal point, or preferably to one degree (Fahrenheit) below, and to maintain it at this point as continuously as may be accomplished by any or all therapeutic means we may have at our command; for it is only after this environmental change is effected, either perfectly or approximately, that Nature, through her germitoxic and phagocytic forces, can successfully cope with her colonized enemies.

Before passing on to the consideration of the practical application of these principles in the treatment of phthisis, it will be necessary to refer, at least in brief, to one of the most constant complications of the disease—a condition which, although owing its existence originally to causes set in operation by the tuberculous invasion, very soon begins to exercise such a pernicious effect upon the patient that it soon equals and often overshadows in clinical importance the tuberculous process itself. Every experienced clinician will appreciate my meaning when I affirm that pulmonary tuberculosis is but a part of the disease pulmonary phthisis. Nor do I think I shall be misunderstood if I go a step further and declare that in the large majority of deaths from consumption this secondary pathological process, rather than the tuberculosis itself, is primarily and chiefly responsible for the fatal issue. I refer to those manifestations of germ life and activity which have been grouped together under the convenient though not very specific term of sepsis. Under this term are embraced all the pathological phenomena resulting from the absorption into the general circulation of the toxic products of any or all forms of micro-organisms infesting the diseased area, including those of the *Bacillus tuberculosis* itself. These poisonous alkaloids, albumoses, and proteins, the products of catabolism in this teeming and multiform bacterial life, not only produce the profound depression of the vital forces that is characteristic of the latter stages of consumption, but are responsible for the functional disturbances of the different organs and viscera so constantly met with in

this disease. But these are not all or even the most important of their malific influences, for they also react upon the general system in such a manner as to provoke marked exacerbations in the febrile process, and by this means complete the vicious circle of pathological influences.

For this septic fever stimulates the growth and multiplication not only of the bacilli, but also of all the other pathogenic microbes whose development is favored by the same environment, and which only invade the respiratory organs after beginning tuberculosis has prepared the way, and these in turn are constantly manufacturing more of the toxines which serve as fuel to maintain the fires of septic fever.

The effect of these constitutional conditions upon intrasystemic but non-localized germ life is a subject that I must dismiss with a mere passing reference. Suffice it to say at present that I believe such germ life, fostered by these favoring influences, to be responsible for many of the associated organic diseases and tissue degenerations which are nearly always present as complications in the last stages of phthisis.

(To be concluded.)

THE USE OF EXTRACT OF SUPRARENAL CAPSULE IN THE EYE.

*A PRELIMINARY REPORT.**

By W. H. BATES, M. D.

The aqueous extract of the powder of the desiccated suprarenal capsule of the sheep is a powerful astringent and hæmostatic. When it is instilled into the eye the conjunctiva of the globe and lids is whitened in a few minutes. The effect is very decided. None of the usual astringents, including cocaine, can produce such an astringent effect. In normal eyes the extract whitens the conjunctiva and sclera when used in very weak solutions—less than one per cent. The effect is increased by repeated instillations or by the use of stronger solutions. In eyes very much congested from inflammation, the extract produces its astringent effect. No case has been found in which the extract did not act.

The following is a partial list of diseases of the eye in which the extract has whitened the conjunctiva and sclera: Trachoma, acute conjunctivitis (catarrhal), chronic conjunctivitis, phlyctænular conjunctivitis and keratitis, interstitial keratitis, rheumatic and syphilitic iritis, episcleritis, irido-cyclitis, sympathetic ophthalmia, atrophy of the globe, secondary glaucoma, traumatic conjunctivitis, traumatic keratitis, traumatic iritis, traumatic kerato-iritis, lacrymal inflammations, and rheumatic ophthalmia.

Visible blood-vessels on the cornea from specific keratitis or from trachoma disappeared from view completely after the extract was used. An eye with a foreign body on the cornea was whitened. During operations on the ocular muscles, tenotomy and advancement, the extract whitened the eyeball.

The extract is not irritating. It generally produces a cooling sensation when dropped into the eye. It does not dilate or contract the pupil, and it has no effect on the accommodation. A tolerance was not established in two cases in which the extract was instilled into the eye several times daily for more than three months. A third patient used the extract daily for more than twelve months, and the extract whitened the eyeball and palpebral conjunctiva as well at the end of the twelve months as at the beginning.

The astringent effect of the extract on the conjunctival vessels is temporary—usually in an hour the eye looks as it did before the extract was used. There was no congestion after the astringent effect had passed off.

The extract when swallowed increases the frequency of the pulse. Considerable doses may be taken without harm. A lady, aged eighty-seven years, had a pulse of forty, which was intermittent and irregular; after the extract had been used in the eye for a few days the pulse became regular, increased to eighty, and remained so during a period of six months that the extract was used. A woman, aged thirty years, swallowed sixty grains at one dose. She vomited immediately, but felt no other ill effects. A man, aged sixty years, after taking two grains three times a day for a week, was suddenly attacked with a peculiar eruption on his hands, which disappeared in ten days without treatment after stopping the extract. The hypodermic use of the extract requires care. In one case ten grains produced alarming symptoms. The face was livid; there was great pain in the head and chest, with a feeling of throbbing. Consciousness was not lost. The pulse was weak. In ten minutes the patient felt all right and walked home from the dispensary, a distance of more than a mile.

Preparation.—The powder of the desiccated suprarenal gland of the sheep is placed in cold water and allowed to stand a few minutes. The fluid is filtered through filter paper and evaporated to dryness at a temperature below 105° F. The residue is the aqueous extract. It requires sixteen ounces of the fresh glands or eight ounces of the powdered desiccated glands to make an ounce of the aqueous extract.

Chemical Properties.—The active principle of the suprarenal gland is very soluble in water, one part of the extract dissolving in somewhat less than three parts of water. It is insoluble in strong alcohol, but soluble in dilute alcohol on account of the presence of water. It is also insoluble in ether or chloroform. The dried extract has remained immersed in strong alcohol, in ether, and in chloroform for several months without apparent injury. The dried aqueous extract has a brown color. The color depends partly on the temperature at which it is dried; the higher the temperature, the darker the color. It does not crystallize. When moist, it is slightly sticky; when dry, it is brittle. It has a slight odor resembling that of extract of beef. The most characteristic chemical property is its reaction with tincture of iron. A drop of tincture of iron added to a neutral solution of the aqueous extract produces a green color. The green color gradually disappears. A precipitate is formed. The addition of more of the iron solution may produce the green color again, with the formation of more of the pre-

* Read before the Section in Ophthalmology of the New York Academy of Medicine, April 20, 1896.

cipitate. The supernatant fluid loses its color at the same time that the precipitate is formed. Finally, it is possible to add sufficient tincture of iron to make the solution of the extract clear, and the addition of more iron does not produce the green color. The precipitate contains the extract and the iron, because the filtered fluid evaporated to dryness leaves no residue except the excess of iron. The precipitate is black and is composed in part of metallic iron, probably. Dilute hydrochloric acid dissolves the precipitate and the solution becomes reddish.

My explanation of the preceding phenomena is that the extract is a strong reducing agent. The green color is due to the fact that the red perchloride is reduced to the green sesquichloride by the extract. The green color changes to the black of metallic iron by further reduction by the extract. What becomes of the extract will require further experiments to determine. The reducing action of the extract is certainly remarkable. The reaction of tincture of iron with the extract is very delicate, and is valuable in many circumstances. A solution of less than one per cent. of the extract will produce the green color on the addition of less than a minim of tincture of iron. A solution of extract of the color of water may contain enough extract to produce the green color. After the extract solution has become infected and has lost its color, the green color may be produced. The sterilized solution also produces the green color. If the extract is in a very strong solution, it may reduce the chloride of iron to the metallic state so quickly that the green color may not be observed. This reaction does not occur in solutions of thyreoid, thymus, testicle, or pineal gland.

When solutions of the extract are filtered through animal charcoal, the solution which has passed through first does not contain the extract. Later the filtered solution contains the extract.

As the extract is easily infected and does not keep unless sterilized, experiments were made to determine if it could be combined with bichloride of mercury in solution without altering the properties of the extract. The extract forms a precipitate with the bichloride, and if enough bichloride is added all the extract can be precipitated. It requires a large amount of bichloride of mercury to precipitate less than a grain of the extract. It can not be used with bichloride. When a solution of nitrate of silver is added to a solution of the extract a precipitate is formed which contains the silver. The precipitate contains part of the extract. The solution of the extract becomes weaker as the nitrate of silver is added. The color disappears. The extract precipitates a very considerable quantity of silver. When a sufficient quantity of nitrate of silver has been added no further precipitation takes place. The clear fluid evaporated to dryness has very little residue, the little residue being mostly excess of nitrate of silver, from which we may conclude that the extract and nitrate of silver compose the precipitate. If the nitrate of silver is not in excess, the clear fluid filtered contains the extract with all its properties unimpaired. The only effect of the silver is to precipitate part of the extract. The precipitate is not soluble in dilute acids.

Before leaving this subject it may be well to emphasize the fact that nitrate of silver precipitates the extract itself, as well as any chlorides or phosphates which may be present. It also precipitates all of the extract if sufficient nitrate of silver is added, and a great deal is necessary. And, finally, the nitrate of silver precipitates everything composing the aqueous extract which may be in solution with the active principle. Of course, with these facts established, it is evident that the extract can not be used in solutions with nitrate of silver.

There are many other substances with which the extract, because it is a strong reducing agent, or for other reasons, can not be used in solution. With solutions of sulphate of copper and other astringents, precipitates are formed containing the extract, or reactions occur which alter the chemical properties of the extract or interfere with its action in the eye.

When the extract was used in solution with cocaine, the eye was irritated and not anæsthetized. In my judgment, the extract can not be used in the same solution with cocaine without impairing both the properties of the cocaine and its own.

The chemical properties of the extract are impaired by dilute hydrochloric, sulphuric, nitric, acetic, tartaric, tannic, and oxalic acids; also by dilute solutions of ammonia and sodic hydrate. In short, the extract does not act well when combined with other substances. I have tried a great many compounds, and I am not sure that there was one which, if added in sufficient quantity, did not interfere with the chemical properties of the extract.

Boiling the aqueous solution produces a precipitate. The filtered fluid can be boiled a number of times and still retain the properties of the extract. It has been boiled fifteen minutes daily for several weeks and the properties of the extract were retained. However, the extract loses its strength by prolonged boiling, and it is possible to destroy it altogether. The color of the extract is much darker after it has been boiled. When the filtered solution is evaporated to dryness, the color of the extract is almost black. The sterilized solution has all the properties of the fresh aqueous extract. It has kept more than a year without change. When infected, it soon spoils like the fresh solution.

My observations on the use of the extract in the eye were made during the past two years. As this use of it is entirely new, it was necessary to be very cautious. I have had no disagreeable effects from it, and my confidence in it increases constantly. It is the only remedy of which I know that is purely an astringent. It is the ideal hæmostatic. It acts by contracting the muscle of the small arteries until the lumen is occluded and a coagulum is formed inside the artery. The following cases of ocular disease were treated with the extract:

Case I.—A patient was treated for acute catarrhal conjunctivitis. The extract had a marked effect in lessening the ocular and palpebral congestion. The eye was well in a week.

It can not be stated positively that the extract is curative in any form of conjunctivitis. As it is only an astrin-

gent and not an antiseptic, theoretically it should not be curative in the infectious diseases of the eyelids. But, after one has seen the unusual and immediate benefit that follows the instillation of only a few drops of the solution, one must believe that it is a valuable remedy. The patients like the cooling effect of the drops.

Case II.—A severe phlyctænular conjunctivitis was treated at the dispensary. The eyeball was red, and showed no white sclerotic at all. At the end of five days there was no change. A few drops of the extract whitened the eyeball at once. Two days later the eye was entirely well. In this case the extract seemed to produce a prompt and decided benefit. The patient had other treatment besides.

In a number of other phlyctænular cases the extract was beneficial. It certainly is not curative in phlyctænular inflammations.

Case III. *Interstitial Keratitis.*—There was so much congestion on the lower part of the cornea that it seemed as though there was blood in the anterior chamber. Atropine and hot water, with constitutional treatment, did not relieve the condition after a week. A few drops of the extract caused all the corneal vessels to disappear from view. A month later they had not become visible again.

In other cases the extract was also beneficial in reducing congestion. Other treatment was always necessary to bring about a cure.

Case IV. *Secondary Glaucoma following Cataract Extraction.*—The eye was congested and very painful. The extract whitened the eye, and the patient was relieved of the pain for a short time. The extract was used many times during the day. An operation finally stopped the pain. In this case the astringent property of the extract was beneficial by relieving the congestion. The tension was not materially reduced.

Case V. *Obstinate Iritis following a "Needling."*—After three months' treatment with atropine and hot water the eye was still red and painful. A few drops of the extract applied at intervals of a few minutes whitened the eye and relieved the pain. There was no relapse a year later. The astringent property of the extract was undoubtedly of benefit in this case. Cases of iritis in general are undoubtedly benefited by the extract. But as the extract is only an astringent, it can not take the place of atropine and constitutional remedies.

Case VI. *Acute Dacryocystitis benefited by the Extract.*—The lower lid was so swollen in the neighborhood of the punctum that the punctum could not be seen. A few drops of cocaine did not relieve the swelling. The extract relieved the congestion so much that a small probe was passed through the punctum into the sac and the sac syringed.

When the patient was seen two days later the swelling of the lower lid had not returned.

A great many cases of lacrymal disease have been treated with the extract. It is only beneficial by lessening the congestion. The nasal duct has opened by reason of the astringent action of the extract.

The extract has been of material assistance in curing a number of obstinate cases of lacrymal disease without operation.

The extract was valuable in operations on the eye in the following cases:

1. *Nervous People.*—An operation on some nervous people is unsatisfactory, because cocaine does not produce anæsthesia. Such cases are quite common.

A woman was operated upon recently for tenotomy of the inferior rectus. The cocaine did not whiten the ocular conjunctiva, dilate the pupil, or produce anæsthesia after being instilled frequently for an hour. A few drops of the extract whitened the ocular conjunctiva, and the cocaine in five minutes dilated the pupil and produced anæsthesia. The operation caused no pain. Traction on the tendon of the muscle with the hook was not painful. There was very little hæmorrhage. A previous operation on the same muscle, using cocaine alone, was painful, and there was an unusual amount of hæmorrhage. The eye was bleeding six hours later. The eye was sore for two days. The extract in this case had a very happy effect by securing a painless operation without hæmorrhage and without soreness afterward.

In a number of other and similar cases the extract has been of material assistance. It is well to repeat that the extract is not an anæsthetic.

2. *Inflamed Eyes.*—It is difficult to produce cocaine anæsthesia in eyes which are congested, the reason being that either the cocaine is not absorbed or because the irritation of the nerves resists the cocaine. The suprarenal extract by astringing the vessels relieves the congestion, and complete anæsthesia with cocaine can then be obtained.

An eye with inflammatory glaucoma was operated upon painlessly by the use of the extract and the cocaine together. Previous to the operation the use of cocaine alone instilled every ten minutes for an hour had no effect on the congestion, pain, or the tension. It seemed magical to observe the eye whiten after the extract was instilled, and the patient was relieved of the pain as well. The tension was slightly reduced. The operation did no good, the pain returned, and the patient's condition was rendered bearable by the use of the extract until relieved by another operation.

3. *Eyes Congested after Recent Operations.* — After a tenotomy there may be so much congestion that cocaine does not produce anæsthesia. The use of the extract in the eye secures cocaine anæsthesia. After cataract extraction there may be so much congestion that cocaine does not act well. It may be desirable to do an iridectomy for prolapse of the iris. In such cases the extract is indicated to reduce the congestion sufficiently so that cocaine will act.

4. *Prolonged Operations.*—An operation which requires more than a few minutes becomes painful in some cases, although cocaine may be instilled frequently. Advancement of an ocular muscle is generally so painful that many operators are compelled to use ether anæsthesia. The operation may begin painlessly. Later the anæsthesia wears off, particularly if there is hæmorrhage. The extract, when frequently instilled, prevents hæmorrhage, and the cocaine anæsthesia is prolonged indefinitely for this reason. As soon as bleeding occurs, one notices very soon the sensitiveness of the eye returning. A number of advancements have been done painlessly and almost bloodlessly by the use of the extract and cocaine together. It is a great comfort to be able to work over some of these cases carefully, without hurry; to operate and test immediately, and

operate again and test many times when necessary. Cocaine is not always sufficient.

5. *Bloody Operations.*—The extract prevents hæmorrhage because of its property of contracting the small arteries. After hæmorrhage begins the extract is not very efficient. It is possible to perform an almost bloodless operation on the ocular muscles or lacrymal sac by instilling the extract frequently. The following case illustrates the value of the extract as a hæmostatic:

A man was operated upon four times during the last three months for stricture of the nasal duct. After each operation the patient lost enough blood to saturate two and sometimes more towels. The hæmorrhage was unusually copious. The operations were very painful. A fifth operation was done in which the extract was used with the cocaine. There was no pain and very little hæmorrhage. The towel used had one spot a quarter of an inch in diameter.

A number of other and similar cases have been operated upon with success. The extract is not an objectionable hæmostatic. It does not form clots like iron or irritate as does peroxide of hydrogen. It is better to use the sterilized solution, as infection has occurred from the freshly prepared aqueous extract of the gland and of the desiccated powder. The extract has failed to control hæmorrhage in some cases and the cause of failure was not apparent. In one case of failure, four previous operations had been done almost bloodlessly on the ocular muscles by the use of the extract.

Finally, the fact that the suprarenal extract is not a substance foreign to the human economy may explain why in the two years during which I have used it no disagreeable effects have been produced by instilling it into the eye. In conclusion, I wish to repeat that within the limits of its sphere of activity there is absolutely no other substance which can take its place.

64 East Fifty-eighth Street.

The Pronunciation of Greek.—In connection with his enterprise of promoting the adoption of Modern Greek as an international scientific language, Dr. Achilles Rose thinks it important that it should be pronounced uniformly and correctly. He will therefore give a lecture on The Proper Pronunciation of Greek in Hosack Hall, in the Academy of Medicine's building, on Friday evening, June 5th, at eight o'clock. Dr. S. Stanhope Orris, professor of Greek in Princeton University and formerly director of the American School in Athens, will preside. It is expected that short addresses will be made by the Hon. D. N. Botassi, the Greek consul general in New York, Professor Leotsanos, and Charles E. Sprague, Esq. Miss Marie Rose will sing the Greek national hymn and recite in Greek. Greeks in their national costume will sing and play on their musical instruments. Among those who have manifested a sympathetic interest in the object of the lecture are the Rev. Dr. William R. Huntington, the Rev. Dr. H. M. MacCracken, the Hon. William M. Evarts, the Hon. Carl Schurz, Dr. Charles A. Leale, Dr. D. B. St. John Roosa, Dr. William H. Thomson, Dr. A. Jacobi, Dr. George F. Shrady, and Dr. Frank P. Foster.

The Brooklyn Medical Society.—At the last regular meeting, on Friday, the 15th inst., the order for the evening was a paper on The Rational Treatment of Uterine Fibroids, by Dr. Walter B. Chase.

THE

NEW YORK MEDICAL JOURNAL,

A Weekly Review of Medicine.

Published by D. Appleton & Co. Edited by Frank P. Foster, M. D

NEW YORK, SATURDAY, MAY 16, 1896.

DEFORMITY AND PARALYSIS OF THE UVULA AS A STIGMA OF DEGENERATION.

In the April number of the *American Journal of Insanity* there is an article by Dr. Charles L. Dana, of New York, who states that a number of his patients have had the uvula sharply bent to the right or to the left. In a rather short period he has met with neuropathic patients who had double, rudimentary, very long, or badly shaped uvulæ, and it seemed to him worth while to investigate the character of the uvula in the degenerate classes, and to present the results of his work.

The uvula, he says, has various normal or accidental variations in shape. It may be very short, very long, very thick and large, or very narrow and slender. It is sometimes connected to the pillars of the fauces on each side by a membrane running the whole length of the organ, forming a "webbed" uvula. It may be curved over to one side, double, or bifid. The commonly recognized deformities are the hypertrophic and the bifid. Since hypertrophy may often be caused by local disease, says Dr. Dana, he has not classed this with deformities in his statistics, and he has noted as deformed only those that were much twisted to one side, or bifid, or supernumerary. Some uvulæ are very irregular in shape and may be considered asymmetrical, but these were not included in the deformed except in very marked instances. Very great differences in the power of contracting the uvula, either voluntarily or in a reflex way, were found, and, therefore, the innervation of the azygos muscles was also observed.

Dr. Dana states that he has examined a hundred and eight insane patients with regard to the shape, size, and innervation of the uvula, and found the total number of deformities to be fifty-three, or almost fifty per cent. The commonest peculiarity, he says, was a twist to one side, about equally to the right or to the left, but a little oftener to the left side. The total number of patients with a twisted uvula was thirty-two, or not quite thirty-one per cent. The proportion was much greater in the degenerative forms of insanity, the number being nineteen, among thirty-five cases, or over half, as against thirteen in sixty-nine cases of acquired insanity. Thus, he says, just in proportion as the physical stigmata of degeneracy were more marked the proportion of deformed uvulæ increased.

Hypertrophy and elongation of the uvula were not abnormally frequent, and they were not commoner in the degenerative than in the non-degenerative types. Bifid uvula

was not found in any case. This, says Dr. Dana, agrees with his view that cleft palate is not a stigma of degeneration, properly speaking, and implies no defect in nervous organization. It is merely an accidental disturbance in bony development. There are other so-called stigmata, he says, which should not be called such, and the time has come for a more critical study and classification of those hereditary or congenital defects that are so frequently and carelessly classed together as stigmata of degeneration.

As regards sex, he says, it was found that the proportion of twisted uvulæ in the men was thirty-two per cent., and in the women twenty-nine per cent. Among the degenerative insanities, however, deformed uvulæ were more frequent among women, being eight in fourteen women as against eleven in twenty-five men. In his cases at Bellevue, he says, degenerative insanities are more frequent among men; and this corresponds to the well-known fact that women vary less from the normal type and have a smaller percentage of degeneracy.

As regards *innervation* of the uvula, examinations were made in fifty-one cases. The uvula contracted in twenty-four cases and was motionless in twenty-seven. In normal persons the uvula is almost always innervated, contracting promptly when the patient says "Ah," or when the fauces are irritated. Hence, a defective innervation of the uvula may be considered a mark of inferior or incomplete nervous development.

Dr. Dana examined fifty-seven neuropathic patients who were suffering from various forms of nervous disease, such as neurasthenia, hysteria, epilepsy, alcoholism, tabes dorsualis, spasmodic disorders, etc. Among them he found three bifid uvulæ (one imperfectly so), thirteen twisted, and one supernumerary. The proportion of twisted uvulæ in them is, therefore, twenty-two per cent. as against thirty-one per cent. in the insane. With regard to normal persons, he says, Dr. Mary E. Henessey examined nearly a hundred throats, with negative results. She stated that the uvulæ were so monotonously regular that the investigation lacked interest.

Dr. Dana examined fifty-four persons who were not neurotic, and found one in eight (thirteen per cent.) with an abnormal uvula. The percentage in phthisis is larger, and, he says, phthisical persons usually show a large proportion of degenerative stigmata. The innervation was observed in a series of thirty normal persons (ten women and twenty men), and the muscles contracted in twenty-two cases (seventy-three per cent. as against forty-seven per cent. in the insane). In five cases the uvula was much elongated. A bifid uvula was found twice among the fifty-four cases. In one instance it was double, rather than bifid, the two parts being widely separated and each well innervated. The patient was a young woman who suffered from a congenital heart lesion, which caused morbus cæruleus.

The palate was examined for deformities, such as torus palatinus, Gothic arch, etc., but notes were made of the torus in only eighty-six cases of insanity. The total number of instances in which there was a decided torus was twenty-four, or twenty-eight per cent. Here, also, the proportion was much greater in the degenerative types of insanity, being twelve in twenty-eight cases, or nearly one half, while in the acquired forms there were twelve in fifty-eight cases. Slight degrees of torus, and even the sharp, narrow torus, are of not much significance; it is the broad, long torus that is the real stigma, says Dr. Dana.

Dr. Dana thinks that he can safely conclude from the results of his inquiry that the existence of a uvula twisted to one side and not innervated forms an anatomical and physiological stigma of degeneration. The twist or bend, he says, implies an unequal development of nerve supply of the two sides, and the degenerate uvula is, as one might *a priori* infer, one that has an unequal and defective nerve supply. Touch the throats of the degenerates, he says, and in more than half of them the azygos muscle makes no response.

MINOR PARAGRAPHS.

A MEDICAL EXCURSION.

On Friday, the 8th inst., after the close of the session of the American Medical Association, a number of members, some of whom were accompanied by their wives, took advantage of a complimentary excursion tendered by the Southern Railroad. The party left Atlanta in the evening and breakfasted at the "Lookout Inn" on the summit of Lookout Mountain. Thence the journey led to Tate's Epsom Springs, Tennessee, where a few hours were pleasantly passed. From there the party proceeded to Hot Springs, North Carolina, to spend the night at the Mountain Park Hotel, where all who cared to avail themselves of the opportunity indulged in the luxury of a natural hot bath. The next station reached was Asheville, North Carolina, the "Land of the Sky," where, at the Battery Park Hotel, a bountiful dinner was served. This was practically the end of the excursion, as the train was divided at Salisbury, at which point north-bound and south-bound passengers separated. The excursion was under the special direction of Dr. C. M. Drake, chief surgeon of the Southern Railroad, who dispensed the courtesies of the road, which provided everything, in a manner which contributed greatly to the enjoyment of the party and convinced the members that "Southern hospitality" was not a mere name.

SMEGMA AS A DIAGNOSTIC DIFFICULTY.

It appears from an article in the *Fortschritte der Medicin* for May 1st, by Dr. Grethe, of Halle, that the smegma of the genitals may take the shape of rodlike particles and appear in the urine in a form not to be distinguished from the tubercle bacillus, short of culture experiments or tests by means of staining. The surest way for the practitioner who has not the resources of a laboratory at his command, Dr. Grethe thinks, is by staining with a concentrated alcoholic solution of methylene blue.

A JOURNAL OF GASTRIC DISEASES.

An esteemed correspondent informs us that the first volume of the *Archiv für Magenkrankheiten* has just been completed, and that it contains articles by Professor Rosenbach, of Breslau, Professor Carl von Noorden, of Frankfort, Pro-

fessor Wilhelm Fleiner, of Heidelberg, Dr. Albert Mathieu, of Paris, and Dr. Max Einhorn, of New York. The editor is Dr. Boas, of Berlin. Our correspondent thinks that such journals are a necessity, and hopes that the work will be aided by further contributions from this country. He speaks with special commendation of its elaborate illustrations.

THE SECOND PAN-AMERICAN MEDICAL CONGRESS.

The Mexico meeting, concerning which we publish an announcement in this issue of the *Journal*, ought to command the most earnest co-operation on the part of the medical profession of the United States. The Washington meeting was heartily and effectively supported by neighboring countries, and by none of them more actively than by Mexico.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending May 12, 1896:

DISEASES.	Week ending May 5.		Week ending May 12.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus	0	0	0	0
Typhoid fever	4	3	7	0
Scarlet fever	86	11	96	12
Cerebro-spinal meningitis	6	6	4	3
Measles	410	17	397	16
Diphtheria	286	46	256	37
Tuberculosis	270	129	176	123
Small-pox	0	0	1	1

The Second Pan-American Medical Congress.—We have received the following circular:

The committee on organization of the second Pan-American Medical Congress has elected Dr. Manuel Carmona y Valle, president; Dr. Rafael Lavista, vice-president; and Dr. Eduardo Liceaga, secretary, and has announced November 16, 17, 18, and 19, 1896, as the time of the meeting to be held in the City of Mexico. The most cordial invitation is extended to the medical profession of the United States to attend and participate in the meeting. Titles of papers to be read should be sent at the earliest practicable date to Dr. Eduardo Liceaga, Calle de San Andres, num. 4, Ciudad de Mexico, D. F., Republica Mexicana. The date selected is in the midst of the delightful midwinter season, when the climate of Mexico is the most attractive to the northern visitor. The occasion should stimulate the medical profession of the United States to a most cordial reciprocation of the generous patronage accorded the Washington meeting of the congress by our Mexican confrères. It should be remembered that the United States is the largest and in many regards the most important of the American countries, and that as a consequence more is expected of it than of any other occidental nation. In no particular is this truer than in the maintenance of position in the realm of scientific medicine on the Western Hemisphere. It is, therefore, simply essential that in this congress—the most important of all medical congresses in its exclusive, yet broad, American significance—the best thought and the best work of the American profession shall be conspicuous in the proceedings. The zeal and enthusiasm of the Mexican profession and the active interest of the Mexican Government are co-operating to make the second Pan-American Medical Congress attractive, important, and memorable. Those who contemplate attending should send their names and addresses at as early a date as possible to Dr. Charles A. L. Reed, St. Leger Place, Cincinnati, that the committee in Mexico may be advised of the probable attendance.

[Signed.] William Pepper, *ex officio president*,
A. M. Owen,
A. Vander Veer,
Charles A. L. Reed, *ex officio secretary*.
International Executive Committee for the United States.

The Marine-Hospital Service.—There will be held in Washington, D. C., on June 15, 1896, a competitive examination of candidates for appointment to the position of assistant surgeon in the United States Marine-Hospital Service. Candidates are required to be not less than twenty-one years of age, and no appointment is made of any candidate over thirty years of age. They must be graduates of a reputable medical college and furnish testimonials as to character.

Successful candidates, having made the required grade, are appointed in order of merit as vacancies arise during the succeeding year. There is at present one vacancy.

A successful candidate, when recommended for appointment, is commissioned by the President of the United States as an assistant surgeon. After four years of service and a second examination he is entitled to promotion to the grade of passed assistant surgeon and to the rank of surgeon, according to priority, on the occurrence of vacancies in that grade.

The salary of an assistant surgeon is $1,600 per annum, together with furnished quarters, light, and fuel; that of a passed assistant surgeon, $1,800 per annum; and that of a surgeon, $2,500 per annum. In addition to these salaries, after five years' service, an additional compensation of ten per cent. of the annual salary for each five years of service is allowed medical officers above the rank of assistant surgeon, the maximum rate, however, not to exceed forty per cent.

When an officer is on duty at a station where there are no quarters furnished by the Government, commutation of quarters is allowed at the rate of $30 a month for an assistant surgeon, $40 for a passed assistant surgeon, and $50 for a surgeon. The successful candidates, after receiving appointments, are usually ordered to one of the larger stations for training in their duties.

Full information may be obtained by addressing the Surgeon-General of the Marine-Hospital Service, Washington, D. C.

The Buffalo Academy of Medicine.—At the last meeting of the Section in Medicine, on Tuesday evening, the 12th inst., the following papers were to be read: Membranous Enteritis, by Dr. Lillian C. Randall; Cystitis, by Dr. W. D. Greene; and Intestinal Stone, by Dr. W. C. Phelps.

The New York Post-graduate Medical School and Hospital.—At the last meeting of the board of directors Dr. Eugene Fuller was elected professor of venereal and genito-urinary surgery, and Dr. John McG. Woodbury was elected professor of orthopædic surgery.

Changes of Address.—Dr. J. Arthur Booth, to No. 46 West Forty-ninth Street, New York; Dr. M. Lewinski, to No. 147 East Broadway; Dr. Joseph E. Winters, to No. 25 West Thirty-seventh Street; Dr. J. M. F. Egan, to No. 46 West 120th Street.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the two weeks ending May 9, 1896:*

Biddle, Clement, Surgeon. Detached from the New London Station, May 9th, and ordered to the U. S. Steamer Monongahela, May 14th.

HARRIS, H. N. T., Passed Assistant Surgeon. Detached from the U. S. Steamer San Francisco, ordered to proceed home, and granted three months' leave of absence, with permission to leave the United States.

MOORE, J. M., Assistant Surgeon. Promoted to Passed Assistant Surgeon.

SHIPP, E. M., Assistant Surgeon. Ordered to examination for promotion, May 4th, at New York city.

WINSLOW, G. F., Medical Inspector. Ordered to New London Station, May 9th.

BRYANT, P. H., Passed Assistant Surgeon. Detached from the U. S. Steamer Petrel, ordered home, and granted three months' leave of absence.

MCCLURG, W. A., Surgeon. Detached from the U. S. Steamer Concord, ordered home, and granted three months' leave of absence.

MCCORMICK, A. M. D., Passed Assistant Surgeon. Detached from the Naval Academy and ordered to the U. S. Steamer Bancroft.

MCMURTRIE, DANIEL, Medical Inspector. Ordered for examination for promotion on May 8th.

The following have been appointed as a board to examine applicants for admission to the Naval Academy: BYRNES, J. C., Surgeon; FLINT, J. M., Medical Inspector; and STOKES, C. F., Passed Assistant Surgeon.

Society Meetings for the Coming Week:

MONDAY, *May 18th:* American Orthopædic Association (first day—Buffalo); New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Hartford, Conn., Medical Society; Chicago Medical Society; Cleveland Society of the Medical Sciences.

TUESDAY, *May 19th:* Illinois State Medical Society (first day—Ottawa); Missouri State Medical Association (first day—Sedalia); Medical Society of the State of Washington (first day—Tacoma); Nebraska State Medical Society (first day—Lincoln); American Orthopædic Association (second day); New York Academy of Medicine (Section in General Medicine); New York Obstetrical Society (private); Buffalo Academy of Medicine (Section in Pathology); Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Chemung (annual) and Kings, N. Y.; Baltimore Academy of Medicine; Hampden, Mass., District Medical Society (annual—Springfield).

WEDNESDAY, *May 20th:* Pennsylvania State Medical Society (first day—Harrisburgh); Illinois State Medical Society (second day); Missouri State Medical Association (second day); Medical Society of the State of Washington (second day); Nebraska State Medical Society (second day); American Orthopædic Association (third day); Medico-legal Society, New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark).

THURSDAY, *May 21st:* Pennsylvania State Medical Society (second day); Illinois State Medical Society (third day); Missouri State Medical Association (third day); Medical Society of the State of Washington (third day); Nebraska State Medical Society (third day); New York Academy of Medicine; Brooklyn Surgical Society; New Bedford, Mass., Society for Medical Improvement (private).

FRIDAY, *May 22d:* Pennsylvania State Medical Society (third day); New York Clinical Society (private); New York Society of German Physicians; Yorkville Medical Association, New York (private); Philadelphia Clinical Society; Philadelphia Laryngological Society; Cleveland Medical Society; St. Louis Academy of Medical and Surgical Sciences.

SATURDAY, *May 23d:* New York Medical and Surgical Society (private); St. Louis Medical Society.

Answers to Correspondents:

No. 450.—We think there is as yet no such requirement in Massachusetts.

Births, Marriages, and Deaths.

Birth.

FERGUSON.—In New York, on Saturday, May 9th, to Dr. and Mrs. F. Ferguson, a son.

Married.

FOWLER—RUSSELL.—In New York, on Tuesday, May 12th, Dr. Edward Payson Fowler and Miss Mildred Russell.

Died.

BELL.—In New York, on Saturday, May 9th, Nellie S. Marsh, wife of Dr. William D. Bell.

BELL.—In New York, on Sunday, May 10th, Mrs. Louis V. Bell, daughter of the late Dr. James R. Wood.

DENISON.—In New York, on Monday, May 11th, Lillie Florence Sweetser, wife of Dr. Charles E. Denison.

MCKINNON.—In Camden, S. C., on Thursday, May 7th, Dr. L. McKinnon.

PATTERSON.—In South Livonia, N. Y., on Saturday, May 9th, Dr. John C. Patterson, in the seventy-third year of his age.

SIMPSON.—In New York, on Saturday, May 9th, Dr. George L. Simpson.

Proceedings of Societies.

AMERICAN MEDICAL ASSOCIATION.

Forty-seventh Annual Meeting, held in Atlanta, Ga., on Tuesday, Wednesday, Thursday, and Friday, May 5, 6, 7, and 8, 1896.

The President, Dr. BEVERLY COLE, of San Francisco, in the Chair.

(*Continued from page 618.*)

A Communication from the Louisiana State Medical Society was read, inviting the members of the association to attend its next meeting, to be held in New Orleans. On motion, the invitation was accepted.

The President's Recommendations.—Vice-president LE GRAND appointed the following committee to consider the recommendations in the president's address: Dr. N. Senn, Dr. Alonzo Garcelon, Dr. Joseph Taber Johnson, Dr. E. S. Lewis, and Dr. Dudley S. Reynolds.

The Proposed Department of Public Health.—On motion of Dr. COCHRAN, of Alabama, the committee on a national department of public health was increased so as to include one member from each State.

The Address in Medicine was delivered by Dr. WILLIAM OSLER, of Baltimore. His subject was *The Study of the Fevers*

of the South. He said that humanity had but three great enemies—fever, famine, and war, of which by far the greatest, by far the most terrible was fever. It was worthy of comment that three of the greatest benefits conferred on mankind, besides which it would be hard to name three of equal importance, had been in connection with the fevers—the introduction of cinchona, the discovery of vaccination, and the announcement of the principle of asepsis. The differentiation of special forms of the continued fevers, and particularly that of typhoid fever, was one of the most interesting chapters in medicine.

It was a very gratifying sign to notice the attention which had been given of late to the subject of typhoid fever in the South. Some years ago a good many physicians resented the imputation that the disease prevailed to any extent in the Gulf States. The speaker had been in the habit for several years of reading the reports of the discussions on this subject at the New Orleans Parish Medical Society, and they had been interesting as showing a progressive development of knowledge such as comes to all of us with fuller study of any problem. Enteric fever presented no constant picture. On the contrary, scarcely any disease had a more varied symptomatology. The fever might be said to be invariable, though non-febrile cases were not unknown; but in the features of onset, in the length of its course, in the presence or absence of symptoms regarded as cardinal, such as rose spots, diarrhœa, and splenic enlargement, typhoid fever was so uncertain that the diagnosis was often dubious.

Advances in the treatment of fevers, and especially of typhoid fever, had kept pace with the rapid progress in our knowledge of the ætiology. Think, said Dr. Osler, of the misery, the tediousness, the discomfort of a typhoid-fever case with three relapses; think of the bleeding, the blistering, the purging, from which at least our fever patients of to-day are free! Contrast the quiet, the care, the gentle nursing, the scrupulous cleanliness, the abundance of cold water to drink, and fresh air which typhoid-fever patients of to-day receive.

He would claim the privilege of a faddist to abuse roundly other faddists who did not swim in his puddle. As a strong advocate of hydrotherapy, he took special pleasure in denouncing as heretics of the worst possible stamp the advocates of the so-called antiseptic and abortive methods of treatment of typhoid fever. He would place the man who did not, for this purpose, also give a purge in a limbo just a little less hot, as he probably did a little less harm. Scarcely a week passed in which the speaker did not receive a temperature chart of some case of typhoid fever which had terminated spontaneously on the twelfth or fourteenth day, as a triumphant demonstration of the value of the drug which from his point of view might as well have been given *per cutem* in the tub. At present he was so wholly opposed to cold-water practices that he confessed to being anything but an impartial critic. The advocates in this country of the abortive and antiseptic plan of treatment must bring forward a much stronger body of evidence than had been presented before they could hope to carry conviction to the skeptic. To assert an abortive treatment of typhoid in a case in which on the thirteenth day of the illness and on the seventh of the treatment a patient died of intussusception, "cured of his typhoid fever on the seventh day of treatment," so it was stated, when the autopsy showed "the characteristic and extensive ulceration of Peyer's patches and tumefied mesenteric glands," was to speak a language unintelligible to an educated medical man, and was nothing short of midsummer madness.

Dr. Osler said that full clinical histories should be furnished of typhoid-fever cases. A man who wished to contribute to the subject should not be too busy to make a careful, critical study of the symptoms, or to jot them down in some order, so that at least they might be intelligible to others.

The second point was the necessity of obtaining autopsies in fatal cases. We all appreciated how difficult this was in private practice, but in determining the nature of obscure atypical cases of fever it was absolutely essential. There was not a hospital in the country in which the determination of the nature of an obscure case of fever was not settled by the autopsy alone.

Thirdly, it was essential that observers who undertook to study this question with thoroughness should approach it with a full acquaintance with the varieties of the malarial parasites and with an accurate knowledge of bacteriological technics.

To us as a profession belonged the chief glory of the century. Enormous as had been the advance in material prosperity, and widespread as had been the diffusion of benefits from the development of the physical sciences, they could not compare with the progress which had been made in the relief of suffering and in the prevention of disease. Our work here ranked among the most memorable achievements in the history of the race. Fever in its varied forms was still with us, and the century had seen in connection with it but one discovery of the first magnitude, but it was of almost equal importance to know that the way had been opened, and that the united efforts of many workers in many lands were day by day disarming this great enemy of the race.

The Trustees' Report.—Dr. E. E. Montgomery, of Philadelphia, read the report of the board of trustees, which showed a balance of $10,080.98 on hand. The board considered this a most excellent showing, considering the financial condition of the country and the radical change in the policy of the *Journal* instituted at the last meeting. The board placed on record their appreciation of the valuable services of their late colleague, Dr. James E. Reeves, and their deep regret at his untimely death. On motion, the report was adopted.

The Rush Monument Fund.—Dr. George H. Rohé, of Maryland, in the absence of Dr. A. L. Gihon, read the report of the Rush monument fund committee, which, on motion, was received and filed.

The Next Meeting.—The nominating committee made a partial report, as to the next place of meeting, recommending Philadelphia, the meeting to begin on the first Tuesday in June, 1897. The report was unanimously adopted.

Dr. H. D. Holton, of Vermont, offered to be one of forty to give $100 toward the Rush monument.

On motion of Dr. Holton, the trustees were authorized to establish a building fund.

The Address in Surgery was delivered by Dr. Nicholas Senn, of Chicago, on *Some of the Limits of the Art of Surgery.* He said modern surgery had attained to a degree of development which entitled it to the distinction of a science and an art. As a science, surgery was of recent date, having been founded and perfected during the last half of the present century. As an art, it had been practised for centuries by our ancestors, with credit to themselves and benefit to the injured, the crippled, and the sick. When Boyer wrote the introduction to his classic work on surgery he expressed the conviction that surgery had reached perfection. How little did he dream of the great changes that would be wrought in the practice of his cherished profession by the progressive pathologists and surgeons of the next few generations! What

a contrast between the standing of the surgeon of to-day in the community, in the profession, and from a scientific aspect and that of his colleagues of only a century ago!

Modern pathology and the new science of bacteriology had laid a permanent foundation for the steady and progressive advance of surgical thought and work. The inflammatory complications of wounds and the ætiology of most of the chronic infective surgical diseases had been cleared up by bacteriological investigations during the last twenty-five years, and the knowledge thus gained had enabled the surgeon to prevent the former in great measure, and to treat the latter intelligently and with increased success. The wonderful development of operative surgery during the same time was one of the earliest and richest fruits reaped from the vast and fertile field sown and cultivated by bacteriologists of every civilized nation. Antiseptic and aseptic surgery had smoothed the rough and rugged pathway of the practical surgeon. Ordinary cleanliness and the almost universal adoption of antiseptic and aseptic precautions in the treatment of wounds in private and hospital practice had nearly eradicated the three greatest enemies of the surgeon of old—namely, hospital gangrene, erysipelas, and secondary hæmorrhage—and minimized the occurrence of suppuration and its manifold immediate and remote complications.

In considering special work, Dr. Senn said that the *furor operativus* manifested in special departments of surgery, and its obvious results, rendered the standing and legitimate scope of the general surgeon very uncertain and indefinite at the present time. Let the general surgeon turn to the right or to the left, advance or retreat, and he found himself on reserved territory. As for the physician, he was expected to answer night calls and prescribe for diarrhœa and whooping-cough, watch cases of typhoid fever, measles, scarlatina, and small-pox, and, should complications arise and he did not report to the proper authority, he rendered himself liable to censure. Much of this ill-applied energy in the surgical world had resulted in detriment to patients and in retarding actual surgical progress. Operative surgery had been carried to extremes.

The speaker next passed on to the consideration of antisepsis and asepsis, saying that the marvelous reduction in the mortality following injuries and operations which the present generation had witnessed was largely due to the prevention of wound complications by the employment of efficient antiseptic and aseptic precautions. Their employment in the treatment of intestinal and accidental wounds had greatly diminished the frequency of progressive phlegmonous inflammation and its disastrous consequences. That such an occurrence could not always be prevented, even by the most scrupulous care and attention to details, every surgeon of experience was willing to admit. In the most virulent forms of phlegmonous inflammation the most heroic and timely treatment, local and general, was often fruitless to avert speedy death. In the most desperate cases the surface lesion was often insignificant; the infection, following the lymphatic pathways, soon reached the general circulation and resulted in death from acute sepsis before any decided gross pathological lesions had appeared at the seat of infection or in any of the internal organs. How rapidly general infection might take place had been shown by the experiments of Schimmelbusch, who had found micro-organisms in the spleen in from five to ten minutes after infection of a wound. Colin and Niessen had demonstrated by their experimental work that amputation a few minutes after inoculation of the ears and limbs of rabbits with pure cultures of anthrax did not protect the animals against generalization of the disease. Such cases in the human being fortunately were seldom met with, but when they did occur, the art of surgery was powerless to arrest the progress of the disease. Parenchymatous injections of solutions of carbolic acid or corrosive sublimate along the course of the inflamed lymphatics, and the internal use of alcohol in heroic doses, promised the most, but in the great majority of cases the extension of the infection continued and terminated speedily in death from general sepsis. In the treatment of diffuse phlegmonous processes it was now customary to make free incisions, establish free drainage, and disinfect the cavity by flushing it freely with a safe and yet efficient antiseptic solution, such as a saturated solution of acetate of aluminum, a three-per-cent. solution of carbolic acid, or a 1-to-5,000 solution of corrosive sublimate, and apply to the part hot compresses wrung out of the same solution.

Closely allied to phlegmonous inflammations of the soft tissues was acute suppurative osteomyelitis, as it was caused by the same kinds of microbes and resulted in more or less extensive destruction of tissue. The ætiology and pathology of this disease were now well understood and upon them was based the early operative treatment which was generally indorsed by the profession at the present time. The early removal of the osteomyelitic product by operative interference, as a rule, relieved pain promptly, limited necrosis, guarded against joint complications, and minimized the danger from general sepsis. Immobilization of the affected limb in a proper position and the exposure of the osteomyelitic focus by the use of the chisel or gouge as soon as a positive diagnosis could be made were the modern resources which had succeeded in greatly reducing the mortality of this disease as well as its immediate complications and remote consequences.

In considering tuberculosis of joints, Dr. Senn stated that only a few years ago the surgeons who paid special attention to diseases of the joints had been enthusiastic advocates of early resection or arthrectomy in cases of tuberculous joint affections. It was believed that such treatment would succeed in eliminating the local affection and in preventing the extension of it to distant organs by reinfection from the peripheral focus. Statistics had proved that these hopes were unfounded, and conscientious surgeons had substituted conservative measures largely in place of operative treatment. A change in practice had taken place, largely due to the beneficial effects obtained from intra-articular and parenchymatous injections of iodoform-glycerin. Dr. Senn had resorted to this treatment in hundreds of cases with the most satisfactory results. In about half or two thirds of all cases of uncomplicated joint tuberculosis this treatment proved curative. It was of special value in the treatment of tuberculous abscess in communication with a tuberculous joint or bone. From one to three or four injections usually sufficed to obliterate the abscess cavity.

Coming to the subject of malignant tumors, he said the essential cause of carcinoma and sarcoma remained to be discovered. The science of surgery must first divulge the true nature of tumors before we could expect a decided advance in their treatment. The essential features of the modern treatment of malignant tumors he summed up very briefly as follows: Operate early and thoroughly. The treatment of "inoperable" sarcoma by injections of the sterilized toxines of the streptococcus of erysipelas and the *Bacillus prodigiosus* had not accomplished the results expected.

In Dr. Senn's opinion, operative interference was absolutely indicated in fractures of the cranial vault under the following circumstances: 1. All open fractures, including gunshot and punctured fractures. 2. Depressed fractures

attended by well-defined symptoms caused either by the depression or by intracranial complications. 3. Rupture of the middle meningeal artery, with or without fracture of the skull. The indiscriminate use of the chisel and the trephine in the hands of the inexperienced practitioner was fraught with danger and should not be encouraged by teachers and expert surgeons. Cerebral localization and aseptic surgery had made it possible to treat a few intracranial lesions successfully by direct operative interference.

The abdominal cavity had been largely a *terra incognita* to the surgeon of less than half a century ago. To-day it was the favorite battle ground of the average surgeon and the select field of the so-called abdominal surgeon. Notwithstanding the wonderful improvements in the technics of operations upon the stomach, partial gastrectomy and pylorectomy had yielded anything but encouraging results. In nearly fifty per cent. of the cases the patients subjected to radical treatment for malignant disease of the stomach succumbed to the immediate effects of the operation. Dr. Senn had opened the abdominal cavity for the surgical treatment of malignant disease of the stomach nineteen times, and in only one case had he found the disease limited to the organ first affected, and in this case the general health of the patient had been so much deteriorated by the obstructive pyloric carcinoma as to contraindicate a radical operation; in all the remaining cases pylorectomy or partial gastrectomy had been out of the question, as the carcinoma of the pylorus or stomach had extended to adjacent organs or had given rise to regional infections through the lymphatic glands sufficient to contraindicate any attempts at radical removal of the disease.

Dr. Senn next considered at length the organs of generation, saying that the greatest onslaught of modern surgery had been upon the organs of generation, male and female. The future historians who would record the work of many gynæcologists belonging to the present generation would have reason to express their surprise at what disasters the art of surgery had produced when plied in cases far in advance of a scientific foundation. Here and there we heard a feeble voice protesting against the indiscriminate surgery practised upon the organs of generation of the opposite sex, but the mutilating work continued in spite of such opposition and well-meant advice. Dr. Senn said that when he arraigned the gynæcologists before such a body, composed of representative medical men of this country, for innumerable and inexcusable transgressions of the rules which ought to govern and control the art of surgery, he did not include the scientific, conscientious workers in that department of surgery, but his remarks applied to a class of routine operators which had recently grown to alarming dimensions, not only in this, but in nearly every country which had been penetrated by the dim rays of so-called bold surgery. The new generation of doctors no longer found satisfaction in practising their profession in some rural district. They had their eyes on large cities and had heard of enticing fees paid to specialists for insignificant operations. Why buy a horse and saddlebags when a fortune awaited them if they devoted themselves to a specialty, more particularly gynæcology? The recent graduate or the man who had become disgusted with country practice sought a much-employed gynæcologist, followed his work for a month or two, and returned to his prospective field of labor a full-fledged specialist. He was now ready to extirpate the uterus, remove ovaries and Falloppian tubes, and sew up imaginary lacerations of the cervix and perinæum. Was it supposed that such an aspirant for gynæcological fame ever examined a woman and found her perfect? Was it not true that in nine cases out of ten he found something to mend? In order to show that the speaker's views were real and not visionary, he related a few instances.

Laceration of the perinæum was a favorite field for the amateur gynæcologist. The extent of the laceration and the symptoms caused by it were not always carefully considered in deciding upon the propriety of an operation. Dr. Senn said that to do an operation on the perinæum in five or seven minutes still served as an attraction for the lookers-on in many private hospitals and gynæcological clinics. He fully appreciated the value of a well-performed perinæorrhaphy in proper cases, but he was equally well satisfied that the operation had often been performed unnecessarily, and that it required more than five or seven minutes to perform it properly.

The frequency with which women were being castrated was one of the most flagrant transgressions of the limits of the art of surgery. It was not unusual for one operator to exhibit from five to six normal ovaries as the result of half a day's work. All kinds of excuses were made for this kind of surgery. Dr. Senn asked the question, Where was this wholesale unsexing of our female population going to end? The beginning of the end had come. The army of women minus their essential organs of generation were beginning to raise their voices against such mutilating work. The number of women who had willingly sacrificed their ovaries to restore their shattered health without securing the expected relief had increased to an alarming extent. This sad experience had made the gynæcologists more desperate and bold. It is difficult to say where this rage for the removal of women's sexual organs would end or what organ would be the next battle ground for the aggressive gynæcologists. The clitoris, the vagina, the cervix uteri, the ovaries, the Falloppian tubes, the uterus, and its ligaments had successively passed through a trying ordeal of operative furor. What the next fad would be was impossible to foretell.

He could not dismiss the subject of genital surgery without making a strong plea in favor of conservatism in the treatment of prostatic hypertrophy. Reference was made to the experiments of J. W. White on animals in this connection, also the clinical experience of Ramm, whose results covered about the same ground as those of White, urging the utility of castration as a legitimate surgical procedure in the treatment of non-malignant obstructive enlargements of the prostate. The reason the speaker alluded to this subject was this: he feared that when this operation on aged men for hypertrophy of the prostate became common property and was indorsed by surgeons of high standing, it would be misapplied in the same way, probably to a lesser extent, than the removal of normal ovaries. Men would be castrated for stone in the bladder, chronic cystitis, and malignant disease of the bladder. It was not always easy or possible to make a positive diagnosis between simple hypertrophy of the prostate and some of the conditions which simulated it closely. In doubtful cases it appeared to him it would be advisable to make the diagnosis sure by a suprapubic cystotomy before resorting to a mutilating operation, rather than remove the testicles and then discover an encysted stone or malignant disease of the bladder or prostate. Castration was such an easy operation that every tyro in surgery would be tempted to perform it upon willing subjects suffering from obscure affections of the bladder complicating hypertrophy of the prostate gland. The Ramm-White operation deserved a fair trial at the hands of competent surgeons in well selected cases, but Dr. Senn apprehended evil in the future, not so much from the proper use as from the abuse of this procedure.

Finally, he had written and delivered his address with malice toward none, in the interest of the suffering portion of our population, for the true advancement of the science and art of surgery, and as a plea for recognition of the good work done by the great mass and backbone of our profession, the modest, toiling, inadequately remunerated general practitioner.

(*To be concluded.*)

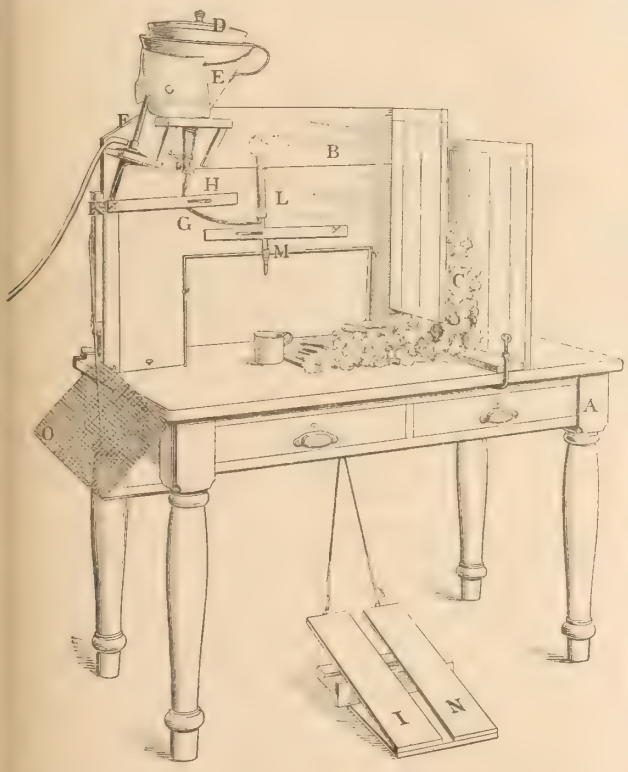
New Inventions, etc.

A MACHINE FOR TUBING BACTERIAL MEDIA.

By Harrison G. Dyar, A.M., Ph.D.,
ASSISTANT IN BACTERIOLOGY, DEPARTMENT OF PATHOLOGY, COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK.

In preparing large quantities of standard media for the use of classes in bacteriology, it has been found that considerable time was wasted by the older methods of tubing the material. In order to shorten this irksome portion of the process, the apparatus here described was devised by the instructor and his assistants. While not embodying a new principle, the machine has proved of great convenience, so that it has been thought worth while to describe it for the benefit of others in a similar position to our own.

The machine is capable of being operated by one man, for all media in ordinary use which may be rendered sufficiently fluid, at the rate of five hundred to six hundred tubes an hour. This includes the measurement of the amount in each tube with considerable accuracy, while the position and motions required for the operator are comfortable and not fatiguing.



The apparatus (see figure) rests on an ordinary table (A). A frame of board (B) supports it, and also serves as a receptacle for empty test tubes (C), which feed down to the hand as shown. A funnel (D), surrounded by a water jacket (E), capable of being kept hot by a lamp (F), contains the medium to be tubed. This feeds down a rubber tube (G), closed by an ordinary spring clamp (H). This clamp is opened by a pedal used by the left foot (I) and attached to a bar (K) by a string passed over three pulleys. The tube feeds into a larger graduated glass tube (L), which is emptied by a short rubber tube (M), closed by a clamp similarly operated by the right foot on a second pedal (N). The pedals are balanced on a central bar, so that when the tubes are both closed the feet are at rest, while a depression of the toe of either foot opens the corresponding clamp. Both hands are left free for manipulating the tubes and placing them in the basket (O), while the receptacle (L) is refilling for the next tube. The amount in each tube is measured by the graduation of this receptacle. An inverted flask with thistle tube may be substituted for the funnel containing the medium.

Miscellany.

Dental Therapeutics.—In the *International Dental Journal* for May Dr. E. C. Briggs, of Boston, says that he is opposed to dentists' going very much into the constitutional treatment of their patients, although drugs have to be used not only locally, but systematically, at times. In cases where a root has been filled and the patient is threatened with some pain about the root of the tooth, perhaps periostitis, periodontitis, or pericementitis, it is often necessary to prescribe some analgetic. In many of these cases where it is impossible to do anything surgically, a great deal can be done for patients by giving them some medicine; and of the analgetics which have proved to be not only safe, but of really great value, he says, are the recent antipyretics that have been discovered, the several petroleum preparations, acetanilide, phenacetine, etc. One of them, says the author, which has given him marked success, is antikamnia. It is an antipyretic and analgetic and is composed of acetanilide, with sodium bicarbonate to render it more agreeable to the stomach, and caffeine, the tendency of which is to overcome any depressing effect which the acetanilide might have on the heart. The average dose is three grains, and four of these doses will relieve and stop pain about the facial nerves. It is also far better than any amount of morphine, and leaves the patient in good condition for the next day. Dr. Briggs has found that in giving morphine so much of it has to be given in order to overcome the local pain that the patient is saturated with it, and it sometimes takes a week to get over the effect, besides which in the majority of cases the pain has been but indifferently relieved by the drug. Another valuable drug, he says, is phenacetine, which is also safe and very reliable in cases of the kind mentioned. An excellent way in which to give it is to associate it with caffeine citrate.

The use of the hypodermic syringe, says the author, is something that dentists are becoming more and more familiar with, and they must use it a great deal more in the future; every man ought to familiarize himself with its use, and be accustomed to it, so that he may be prepared for cases of collapse and other accidental conditions which may arise.

The heart can be reached by the use of amyl nitrite. Sometimes cases of collapse and syncope occur when cocaine is used; but Dr. Briggs thinks that collapse is not often caused by cocaine poisoning, but almost always by shock; of course, he says, we must recognize that it may be possible that the

cocaine is poisoning the patient, and the amyl nitrite is a very excellent antidote for cocaine poisoning. It is bought in little glass capsules, and no skill or effort is required to prescribe one or to use one—it is simply broken in a napkin and the patient inhales it. It dilates the capillaries immediately and relieves congestion of the heart, and the circulation is re-established. In this connection, says the author, it is well to speak again of the cases of tobacco heart, of which we are getting a great many. The patient who is afflicted with tobacco heart is just as likely to die in the office as he is to die anywhere, and if there is a little shock, a sudden violent pain, he collapses. It is highly important, he says, that we should be ready to meet such an emergency, should it happen in an office, as it would be very embarrassing and distressing to have a patient die there.

The question of local anæsthesia is also an important one, says Dr. Briggs; the injection of weak solutions of cocaine submucously or subcutaneously is one of the greatest helps in practice. Take, for instance, the cases of pyorrhœa in which very heroic treatment is needed, and where, if the patient is not insensible to pain, in nine cases out of ten the treatment will not be properly done. In cases of opening into the antrum, and in the many cases of abscess, local anæsthesia is also of great assistance.

The solution of cocaine that Dr. Briggs uses is made according to Schleich's formula, viz.:

℞ Hydrochloride of cocaine..... 20 parts;
Hydrochloride of morphine..... 25 "
Chloride of sodium..... .. 20 "
Water..... 10,000 "

with two drops of a 1-to-100 solution of carbolic acid.

The quantity of cocaine may even be doubled, he says, and still be very safe, as it is only 0·4 of one per cent., and yet that solution, if injected, will enable one to work with great freedom. In the selection of a hypodermic syringe it is very important to get a very fine needle, as it can be inserted with almost no pain.

One of the new drugs which the author has found very useful is trichloracetic acid, which has been discovered, he says, to have some special action as a tonic, an astringent, and a stimulant to the mucous surfaces, and it is said to be decidedly effective in rendering it easier to remove dental calculi, and this, he thinks, has been proved in actual practice; at all events, it is excellent in its tonic and stimulant effect on mucous surfaces.

Sodium bicarbonate, says Dr. Briggs, is so simple and safe that it can be put into the hands of the majority of patients. Obstinate cases of inflammation about the gum, with a puffy, swollen membrane, will yield to this treatment and the inflammation will subside. The author says that he has found that it will do good work when other drugs have failed. It is used with very great benefit in cases of sensitiveness about the necks of the teeth.

In regard to general anæsthesia, says Dr. Briggs, the importance of true anæsthesia is to be borne in mind. If, he says, an unlimited amount of any anæsthetic is given to a patient and causes narcotism, we are doing only what we should do with any poisonous drug when we went beyond the prescribed dose. When we administer opium and morphine, we should consider it extremely dangerous to give more than the maximum dose, and yet in the administration of anæsthetics an unlimited amount is provided without much thought of the true therapeutics, the true point to which we wish to carry the patient—that is, anæsthesia without narcotism.

Dr. Briggs refers to the relations of chloroform and ether, and says that previous to the investigations of the Anglo-Indian Commission at Hyderabad it was supposed that chloroform stopped the action of the heart first, and that ether was safer because it stopped the respiration first. The commission, however, found that chloroform acted on the respiration first, just as ether does; the only thing is that it has to be used more carefully.

Dr. Briggs thinks that later on we shall use chloroform a great deal more than we do now, and it would simplify matters a great deal, he says, when the question arose as to what anæsthetic we should use, if we more clearly understood the qualities and effects of chloroform.

Statistics show that deaths occur in only 0·0008 of one per cent. of cases where anæsthetics are administered. Of those, if we weed out the ones that are produced by careless overdosing, caused by shock (which might have occurred from any shock), there is an exceedingly small percentage which can apparently be charged to anæsthetics themselves. Many of the fatalities which are charged to anæsthetics would, if investigated, be found due to other causes. One man, at the autopsy, was found to have had an abscess in the brain; others have been found far gone in kidney trouble and heart disease, and it simply was an accident that they should have died at that particular time. They were likely to die at any minute, and as a matter of fact they died easily under an anæsthetic.

Dr. Keep, of Springfield, says the author, has lately made some researches into the use of anæsthetics, and he speaks very strongly about the propriety of using chloroform if it is used right, and he gives the dose of chloroform as half an ounce at the most. He sometimes combines it with ether, in which case he gives an ounce and a half of ether, but his dose of chloroform is only two drachms. He says that when it is properly administered complete anæsthesia can be obtained, and he fails to see how anybody who has not severe troubles of the kidney, the brain, or the heart could possibly suffer from that amount.

Dr. Lewis A. Sayre, of New York, has used chloroform for years in doses of from five drops to twenty drops, and he has repeatedly asserted that it was perfectly safe to use.

The Nebraska State Medical Society.—The twenty-eighth annual meeting will be held in Lincoln on May 19th, 20th, and 21st, under the presidency of Dr. J. E. Summers, Jr., of Omaha. Besides the president's address, the programme includes the following papers: The Significance of Blood Examinations in Disease, by Dr. W. H. Christie, of Omaha; Anterior Poliomyelitis, by Dr. W. Ross Martin, of Omaha; Infantile Scorbutus, by Dr. H. M. McClanahan, of Omaha; Motor Aphasia, with a Report of a Case, by Dr. F. E. Coulter, of Omaha; Notes of a Case of Suspended Volition and Locomotion, by Dr. G. A. Meredith, of Crawford; Dyspepsia, by Dr. A. N. Loper, of College View; The Reports of Two Peculiar Cases, with Remarks on Each, by Dr. H. P. Hamilton, of Omaha; Some Points in the Management of Empyema, by Dr. B. F. Crummer, of Omaha; The Modern Epidemics, by Dr. A. R. Mitchell, of Lincoln; An Entozoon, probably of the Order *Cestoidea*, by Professor H. B. Ward, of Lincoln; Medical Experience among Indians, by Dr. G. W. Ira, of the Santee Agency; Business Matters in the Practice of Medicine, by Dr. C. S. Minnick, of Palmer; Injections of Carbolic Acid in the Treatment of Hydrocele, Ganglia of the Wrist, Housemaid's Knee, and Tuberculosis of the Cervical Glands, by Dr. V. H. Coffman, of Omaha; A Case of Stricture of the Œsophagus, by Dr. J. H. Miller, of Gering; A Report of a Few Cases, Surgical and Others, by Dr. A. B. Anderson, of Pawnee City; Syme's Operation, by Dr. P. H. Salter, of Norfolk; Un-

usual Cases in General Practice, by Dr. E. A. Benton, of Central City; A Report of Surgical Cases, by Dr. J. P. Lord, of Omaha; Appendicitis, by Dr. H. J. Winnett, of Lincoln; A Year's Experience with Appendicitis in Country Practice, by Dr. M. D. Carter, of Tobias; Recurrent Appendicitis a Cause of Acute Interstitial Salpingo-oophoritis, by Dr. W. H. Parkhurst, of Dunbar; Chloroform in Labor, by Dr. V. H. Coffman and Dr. A. F. Jonas, of Omaha; Practical Asepsis in Obstetrics, by Dr. J. L. Sutherland, of Grand Island; Intrauterine Hydrocephalus, by Dr. Ira G. Stone, of Mead; The Pernicious Vomiting of Pregnancy, with a Report of a Case, by Dr. F. A. Butler, of Harvard; A Case of Puerperal Mania, by Dr. Minerva L. Newbecker, of Lincoln; Puerperal Eclampsia, by Dr. Charles Rosewater, of Omaha; Phlegmasia Dolens, by Dr. A. D. Wilkinson, of Lincoln; Puerperal Septicæmia, by Dr. Thomas H. Ashton, of Syracuse; Lessons from Thirty Abdominal Sections done during the Year, by Dr. W. O. Henry, of Omaha; Of What Benefit is Surgical Treatment in Ovarian Neuroses? by Dr. A. F. Jonas, of Omaha; Electricity in the Treatment of Uterine Fibroids, by Dr. G. H. Simmons, of Lincoln; A Case of Uterine Malignant Tumor Treated by the Coley Toxines, by Dr. R. M. Stone, of Omaha; Metaplastic Tumor—Sarcoma of the Ovary—Tuberculous Peritonitis, by Dr. B. B. Davis, of Omaha; Progressive Muscular Atrophy, by Dr. W. O. Bridges, of Omaha, and Dr. W. R. Hobbs, of Elmwood; Epilepsy, by Dr. T. L. Green, of Lincoln; The Optic Nerve, by Dr. M. H. Garten, of Lincoln; Spastic Paraplegia, with a Report of a Case, by Dr. Henry B. Wilson, of Omaha; Trachoma, by Dr. J. C. Denise, of Omaha, and Dr. W. L. Dayton, of Lincoln; Burns of the Conjunctiva, by Dr. D. C. Bryant, of Omaha; A Report of Three Cases of Dacryocystitis with Stricture of the Duct, by Dr. H. S. Bell, of Kearney; An Unfortunate but Instructive Case of Middle-ear Disease, by Dr. H. Gifford, of Omaha; The Ocular Symptoms in Bright's Disease, by Dr. S. E. Cook, of Lincoln; Dacryo-cystitis, by Dr. H. S. McGavren, of Omaha; Marrow Changes in Pernicious Anæmia—*Bacillus pyocyaneus* Infection in Children—The Co-existence of Tuberculosis and Malignant Disease, by Dr. O. Grothram, of St. Paul, and Dr. W. H. Parkhurst, of Dunbar; The Rôle of the *Staphylococcus pyogenes albus* in Some Cases of Acute Rheumatic Infection, by Dr. O. Grothram, of St. Paul; Micro-organisms and Disease, by Dr. J. E. Lamb, of Wahoo; Superfluous Hair and Facial Blemishes, by Dr. E. E. Womersley and Dr. V. A. Coffman, of Omaha; Some Relations of the New Psychology to the Study of Medicine, by Professor H. K. Wolfe, of Lincoln; Auscultation of the Lungs up to date, by Dr. H. B. Lowry, of Lincoln, and Dr. B. F. Crummer, of Omaha; and The Treatment of Epistaxis, by Dr. F. S. Owen, of Omaha. Papers will be read also by Dr. C. E. Coffin, of Asylum; Dr. W. D. Shields, of Holdrege; and Dr. A. F. Miller, of Randolph.

The American Neurological Association.—The twenty-second annual meeting will be held in Philadelphia, on June 3d, 4th, and 5th. The following titles are included in the preliminary programme: Hæmorrhagic Encephalitis, by Dr. James J. Putnam, of Boston; The Stigmata of Degeneration, by Dr. Frederick Peterson, of New York; Progressive Muscular Atrophy of Sudden Onset, by Dr. Theodore Diller, of Pittsburgh; Pitting about the Hair-cups, a Trophic Change in the Skin in Certain Nervous Disorders of Central Origin, by Dr. William Browning, of Brooklyn; Brown-Séquard Paralysis, with a Report of a Case, by Dr. George C. Preston, of Baltimore; A Report of a Case of Tumor of the Optic Thalamus, with a Consideration of the Mental Symptoms, by Dr. Walter Channing and Dr. Edward Wyllys Taylor, of Boston; A Case of Chronic Adult Chorea, with Pathological Changes Similar to those of General Paresis, by Dr. E. D. Bondurant, of Tuscaloosa, Alabama; The Cerebral Complications of Raynaud's Disease, by Dr. William Osler, of Baltimore; A Nearly Constant Difference between the Right and Left Paroccipital Fissures, illustrated by specimens and photographs, by Dr. Burt G. Wilder, of Ithaca, N. Y.; A Report of a Case of Rapidly Fatal Cerebritis, resembling Cerebro-spinal Meningitis: exhibition of sections of the brain, the mid-brain, the pons, and the post-oblongata, by Dr. James Hendrie Lloyd and Dr. Joseph Sailer, of Philadelphia; The Late Results of Traumatic Neurasthenia, by Dr. David Inglis, of Detroit; Notes on the Prognosis and Duration of Attacks of Mental Disease, by Dr. Henry R. Stedman, of Boston; Cases of Brain Tumor, with Operations, by Dr. Philip Zenner, of Cincinnati; a report of the committee on neuronymy, by Dr. Burt G. Wilder, of Ithaca, N. Y.; Nerve Disturbances from Indigestion, by Dr. Henry S. Upson, of Cleveland; The Dorsal Sack, the Aulix, and the Diencephalic Flexure, by Dr. Burt G. Wilder, of Ithaca, N. Y.; A Clinical Study of Some Cases of Insanity in Adolescence, by Dr. Richard Dewey, of Wauwatosa, Wis.; Œdema of the Eyelids in Graves's Disease—Thyreoidectomy—Presentation of the Patient, by Dr. J. Arthur Booth, of New York; Does Antisyphilitic Treatment Prevent the Occurrence of the Diseases of the Nervous System which are Considered Syphilitic in Origin—A Statistical Study, and A Contribution to the Pathology of Epilepsy, and a *Résumé* of the Utility of Operations in Epilepsy, by Dr. Joseph Collins, of New York; The Spinal Cord in Cancer, with a Report of a Case, by Dr. Charles W. Burr, of Philadelphia; and The Toxicity of the Nervous System as a Cause of Pulmonary Consumption, by Dr. Thomas J. Mays, of Philadelphia.

The Frequent Dependence of Insomnia, Mental Depression, and other Neurasthenic Symptoms upon Diseases of the Gastro-intestinal Tract.—In a paper with this title, read before the Section in Practice of Medicine of the American Medical Association at the recent meeting, Dr. Boardman Reed, of Atlantic City, pointed out that the symptoms named were admitted to result from the graver forms of disease of the alimentary canal, such as cancer, ulcer, gastric catarrh, dilatation, etc., in consequence of the lowered nutrition which these affections induced, from starvation of the nerve centres consequent on impoverishment of the blood, or from poisoning primarily of the blood and secondarily of all the tissues by the products of fermentation, putrefaction, and suboxidation. He showed that, while cancer and ulcer of the stomach were generally recognized at a comparatively early stage, on account of the pain and vomiting which characterized them, gastric catarrh, gastric atony, and dilatation of the stomach were oftener allowed to progress to an advanced and comparatively hopeless stage before they were properly diagnosticated and the patients placed under appropriate treatment. That form of gastric derangement in which an excess of hydrochloric acid is secreted, he referred to somewhat at length, because it was exceedingly common, accompanied nearly always by severe neurasthenic symptoms, including especially insomnia, etc., and yet, being only demonstrable by the tube after a test meal, was very generally overlooked. He dwelt especially upon the almost constant association of superacidity with constipation, and suggested as an explanation of the connection, that the superacid contents of the stomach, upon passing into the bowel, inhibited or greatly diminished the activity of the intestinal ferments, which required an alkaline or at least a neutral medium, and

that, besides this serious interference with intestinal digestion, the excessive acidity might set up irregular or spastic contractions of portions of the gut. He had felt these contracted portions in such cases and considered the constipation thus produced an important link in the chain of causes which resulted in self-intoxication.

Congenital Teeth.—In the May number of the *Edinburgh Medical Journal* Dr. J. W. Ballantyne gives a detailed account of several cases which have come under his observation, also of his researches in regard to this anomaly. His general conclusions are as follows:

1. Congenital teeth form a rare anomaly, but one which has long been known both to the profession and to the public.

2. Their presence has often an ill effect upon lactation, partly on account of the imperfect closure of the infant's mouth, and partly by the wounding of the mother's nipple; sublingual ulceration may also be a result, and infantile diarrhœa and atrophy are more distant consequences. Sometimes, however, symptoms are altogether absent.

3. Congenital teeth have probably little or no prognostic significance as regards the bodily or mental vigor of the infant carrying them.

4. The teeth usually met with are lower incisors, but sometimes upper incisors may be seen, and very rarely molars of either the upper or lower jaw. Other facial or buccal malformations may occasionally be met with.

5. They are caused by the premature occurrence of the processes which normally lead to the cutting of the milk teeth; in a few cases it would seem that the anomaly is due to a true ectopia of the dental follicle and its contained tooth.

6. In a few instances an hereditary history has been established.

7. As congenital teeth are usually incomplete and ill-developed, and likely to be more an inconvenience than an advantage to the infant, they are best removed soon after birth, an operation which can be easily and, except in very rare instances, safely performed.

8. The occurrence of premature teeth in certain well-known historical personages is an interesting fact the importance of which has been much exaggerated.

The Effect Produced upon Certain Animals by Injecting into the Rectum the Toxines and Antitoxines of Diphtheria and of Tetanus.—In the June number of the *New York Therapeutic Review* there is an article on this subject by Dr. Paul Gibier.

In various papers recently published he says this curious fact has been mentioned—that in certain parts of India the inhabitants poison the cattle of their neighbors, upon whom they wish to be revenged, with the venom of snakes, which is applied in a peculiar manner. Pieces of rags are saturated with the venom and forcibly introduced with a stick into the rectum of the animal they wish to destroy. The biological analysis recently made with an extract taken from such pieces of linen seems to have determined that they contain a venomous substance. Thus it would appear that the venom of the snake, as well as most of the mineral and vegetable poisons, can produce death if introduced into the system by way of the rectum.

Since comparison between the venom of snakes and the bacteriological toxines has been repeatedly made, it may prove of interest, says Dr. Gibier, to relate some researches in regard to the effects produced on guinea-pigs, rabbits, and dogs by the rectal injection of the two toxines and antitoxines that have received the most attention, that of diphtheria and that of tetanus.

On November 4, 1895, a rabbit of medium size received in the rectum an injection of three cubic centimetres of a diphtheria culture which had simply been passed through a filtering paper and was of high toxic power. During the several days following the animal received up to fifteen cubic centimetres of the same toxine. It remained alive and did not seem to suffer from the injections.

A similar experiment was made on this same rabbit with tetanus toxine. Several doses of three cubic centimetres each were injected, in all about fifteen cubic centimetres. *The effects were nil.*

A terrier, to which a dose of several cubic centimetres of tetanus toxine was given in the same manner, experienced no trouble from it. A few drops of the same preparation, injected under the skin of a second dog and into the tibial vein of a third, caused fatal tetanus.

At the same time three guinea-pigs received in the rectum several doses of three cubic centimetres each of diphtheria toxine, which was equivalent to nearly twenty cubic centimetres. A little over two tenths of a cubic centimetre of this toxine if administered hypodermically was sufficient to cause the death of an animal of the same size and weight. In spite of the relatively enormous doses which were injected the animals suffered no inconvenience from it.

Another series of guinea-pigs received in the rectum doses of three cubic centimetres each of tetanic toxine, the one hundredth of a drop of which, if injected subcutaneously was sufficient to produce death by tetanus after a period of from two to four days. These animals did not show the least contraction and remained in good health.

From these negative results, says the author, it appeared to be very doubtful if immunity could be produced by rectal injections of toxine. Nevertheless, they were continued during a certain length of time in such a manner that the guinea-pigs received a volume of diphtheria and tetanus toxin which would have been sufficient to immunize an animal of larger size, had the injections been methodically made into the subcutaneous tissue. A minimum dose sufficient to produce death by diphtheria and by tetanus was then given hypodermically to both groups respectively, and also to the "control" animals. Death resulted in every case.

Still another series of experiments made with the antitoxine of diphtheria and that of tetanus yielded results which are not less interesting, especially, he says, if we compare them with those which Professor Chantemesse has observed in children, which he has recently published. According to this author, in the child the antitoxine may be administered by the rectum instead of by the subcutaneous injections, which are sometimes followed by local pains, general erythema, and urticaria, etc., whereas the rectal injections cause none of these inconveniences; they can be given in larger doses, and yield therapeutic results not less brilliant than those obtained with the hypodermic needle.

The conclusions which may be drawn from the experiments made on guinea-pigs are quite different.

If a rectal injection of half a cubic centimetre of diphtheria antitoxine containing nearly a hundred units is given to one of these animals, and, if it receives, twenty-four hours later, a subcutaneous injection of a minimum fatal dose of toxine or one drop of a culture of the Klebs-Loeffler bacillus, death follows the latter in from twenty-four to thirty-six hours.

The local œdema is as extensive as in the "control" animals, which survive at least as long as those which receive

ne rectal injection of antitoxine. In the same experiments, ther guinea-pigs which received hypodermically a much naller quantity of antitoxine twenty-four hours before the ·ial injection were protected, and did not show a trace of ·dema at the point of inoculation.

The following experiments, made with the tetanus antitoxne in three groups of guinea-pigs, lead to the same conclusions: In the first group half a cubic centimetre of antitetanic ·rum, antitoxic in the proportion of one to several millions, ·as given by the rectum; in the second group ("control" nimals) no preventive injection was given; in the third roup, an infinitesimal dose of antitoxic serum was given subutaneously. Twenty-four hours later a minimum fatal dose f toxine was administered subcutaneously to all the animals, niformly, and the following results were observed:

The guinea-pig which received the rectal injection previus to the trial hypodermic injection died on the fifth day ·ith tetanic contractions.

The "control" guinea-pig (which received no antitoxine) ied on the seventh day with the same symptoms.

The guinea-pig which received hypodermically a dose of ntitoxine equivalent to one millionth part of its weight, wenty-four hours before the trial injection, survived.

From these experiments we may conclude, then, says Dr. ibier, that:

1. In rabbits, in dogs, and in guinea-pigs, rectal injections f relatively massive doses of diphtheria and tetanus toxines ·e followed by no apparent effects.

2. Rectal injections of even large doses of these toxines, any times repeated, do not produce the least degree of imunity against the toxine thus injected.

3. Rectal injections of doses of antitoxine (diphtheria and ·tanus) at least a thousand times as large as the preventive ibcutaneous dose are powerless to prevent death from a inimum fatal dose of diphtheria or tetanus toxine.

4. The rectal mucous membrane may retain the active rinciples of the toxines and the antitoxines, or it may deroy them. In case it permits of their absorption, the infernce is indubitable that they are carried through the portal ·stem to the liver and destroyed by that organ.

Creosote in the Treatment of Enlarged Bronchial Glands. -The May number of the *Archives of Pædiatrics* contains an ·count of two cases which came under the observation of r. J. P. West, of Bellaire, Ohio. The author was called to ·e a child, fourteen months old, with a croupy cough. The ·ild was unusually bright and had previously had good ·alth. He had been partly nursed and partly fed on cow's ilk until he was ten months old, after which time he had been ·d entirely upon cow's milk. The cough resembled in every ·spect that of membranous croup, being harsh, hoarse, and ·assy. On examination, no dyspnœa or change in the voice as found. There was a rather severe coryza and there were ·e physical signs of mild bronchitis. A salve was prescribed ·r the former and an expectorant for the latter, and in a eek these symptoms disappeared, and the cough subsided ·mewhat in frequency, but it did not change in character. he cough persisted during the autumn and winter with but ne intermission; there were no paroxysms of coughing, but ·om one to four tight, ringing barks, without evidence of ·ain or soreness, and there was never any indication of se·etion. As the cough continued after the bronchitis disap·eared, the chest was again examined to ascertain the cause f the cough. There was marked dullness over the upper art of the breast bone, and with a stethoscope a venous hum ·uld be heard over this area when the head was thrown back, which would disappear when the head was brought upright. There was no change in resonance over the other parts of the lungs or in the respiratory murmur.

In October the cough increased in frequency and severity and resisted all treatment. The child became very pale and thin; his whole face, particularly under the eyelids, was puffed, and little broken capillaries were visible over the cheeks. This condition persisted until the middle of February, when he was taken sick with croupous pneumonia. What parts were involved, and to what extent, can not be stated, says the author. Formerly the patient had been very tractable, but during this sickness he fought so strenuously against an examination that it had to be abandoned. The diagnosis was based upon the temperature, the perverted pulse-respiration ratio, the subjective symptoms, and the mode of termination. During this sickness the cough lost its croupy character and assumed a hacking quality, and the patient coughed up and swallowed some secretion. While resolution was going on the cough changed again and became croupy. In April there was an attack of bronchitis accompanied with an increase in the frequency of the cough. Twice during the winter there had been an offensive diarrhœa, the last attack of which had persisted for three weeks and been hard to control. Except during the attacks of pneumonia and bronchitis, there was no acceleration of respiration or any dyspnœa. Occasionally the temperature was elevated, but never for more than five days; the rectal temperature never rose above 102° F. No treatment had any effect on the cough, and any slight exposure to a draft would always increase it.

In studying the case over, says Dr. West, it was recalled that while the child had been taking a mixture of creosote and bismuth for the diarrhœa there had been some amelioration of the cough. As it was thought this had probably been due to the creosote, it was again given to him in half-drop doses four times daily. In ten days the cough lost much of its croupy character and diminished considerably, and in two weeks more it ceased entirely. Three weeks later it returned, but the renewed administration of creosote had a very perceptible effect on it. Once again during the winter it was promptly checked with the drug. Since the cessation of the cough, says the author, the child has become stout and is in good health. There is still more than the normal dullness over the upper part of the sternum, and the venous hum can still be elicited; both, however, are slowly disappearing. The face remains full and the broken capillaries are plainly to be seen.

The second case was that of a sister of the first patient. When she was seven months old, and apparently in her usual health, the cough made its appearance, and she was immediately placed under the author's care. At this time there was no coryza, bronchitis, or other disturbance of the pulmonary system or of the alimentary canal, or any fever. She had been rather costive during the summer, and was still, and an occasional enema was required. There was no dullness over the sternum, but a very mild hum could be heard when the head was thrown back, which would disappear when it was upright. It was ten days before the cough was heard again, when it became frequent, and the physical signs of the enlarged glands were more distinct. A fifth of a drop of creosote had been given in the mean time. By the end of three weeks she was able to digest modified cow's milk, although in this time she had lost a pound and three quarters. A modified milk which represented a very small percentage of proteids was then given and finally digested, and on this she thrived. With this and the creosote increased to half a

drop four times a day, the cough gradually diminished, and in a month it was gone. For three months the venous hum could be heard, but now no signs of the enlarged glands could be detected.

When the author saw the first patient it seemed to him that the enlargement of the glands was an acute process due to the bronchitis. There was no question as to specific trouble, and there were no indications that it was due to any morbid deposit or new growth, except possibly tubercle. From the fact that there was no pain or soreness at any time, and from the rapidity with which the peculiar cough and the physical signs were manifested, it would appear, he says, that there had been considerable enlargement prior to the onset of the bronchial catarrh, and this quickly caused a greater increase in the size, which remained permanently. For a period of two or three weeks before the advent of the cough the child had not been feeling well. There was no definite ailment, but there were peevishness, a desire to be let alone, impaired appetite, and slight feverishness at times. The appearance of the same symptoms in the second case, without any local trouble and with only the impaired nutrition that had existed all the summer, would lead one, he thinks, to conclude that the tubercle bacillus was the cause in both cases.

As a rule these glands become smaller and smaller after a time, but the effect of the creosote on the symptoms, objective and subjective, was most marked, particularly in the first case.

The Ohio State Medical Society.—The fifty-first annual meeting will be held in Columbus on May 27th, 28th, and 29th, under the presidency of Dr. Dan Millikin, of Hamilton. Besides the president's address, the programme includes the following papers: Pathological Conservation, by Dr. H. D. Hinckley, of Cincinnati; The Present Status of Military Medicine and Surgery, and their Relation to General Practice, by Dr. James E. Pilcher, of Columbus; The Present Status of Vegetable Parasitic Diseases of the Skin, by Dr. William T. Corlett, of Cleveland; Rational Medicine, by Dr. H. B. Gibbon, of Tiffin; Extensive Skull Fracture with Unusual Symptoms—Operation—Recovery, by Dr. Thomas W. Jackson, of Akron; Salpingitis, by Dr. F. F. Lawrence, of Columbus; Research into the Technics of Laryngeal Operations, with a Report of Four Successful Total Extirpations, by Dr. George W. Crile, of Cleveland; Is it Grippe, or What? by Dr. B. Tuckerman, of Cleveland; Antitoxine in the Treatment of Diphtheria, by Dr. S. S. Haldeman, of Portsmouth; The Treatment of Diphtheria, by Dr. J. E. Fackler, of Versailles; The Surgery of Tuberculous Lesions, by Dr. Joseph Ransohoff, of Cincinnati; The Ætiology and Prophylaxis of Puerperal Sepsis, by Dr. R. E. Skeel, of Cleveland; Intestinal Obstruction—Some Diagnostic Points and Treatment, by Dr. M. Stamm, of Fremont; Perforating Ulcer of the Stomach, by Dr. W. J. Gillette, of Toledo; The Accessory Cavities and their Relation to the Eye, with a Report of Cases, by Dr. C. R. Holmes, of Cincinnati; Some of the Accidents of Cataract Operations, by Dr. B. L. Millikin, of Cleveland; On the Causes and Mechanism of Retroflexion and Retroversion of the Uterus, by Dr. Hunter Robb, of Cleveland; Phlegmasia Alba Dolens following Laparotomy, by Dr. M. Rosenwasser, of Cleveland; Pelvic Hæmatocele and Hæmatoma, by Dr. Charles N. Smith, of Toledo; What the General Practitioner should know about the Eyes, by Dr. R. C. Heflebower, of Cincinnati; Four Cases representing Periods in the Evolution of the Treatment of Hip-joint Dislocation, by Dr. S. S. Thorn, of Toledo; a Review of the Results of the Author's Method of Anchoring the Kidney, by Dr. R. Harvey Reed, of Columbus; Strychnine and Nitroglycerin in the Treatment of Pneumonia, by Dr. Frank W. Thomas, of Marion; Acute Purulent Inflammation of the Middle Ear, by Dr. John A. Thompson, of Cincinnati; Serious Complications of Suppuration of the Middle Ear, by Dr. Max Thorner, of Cincinnati; The Influence of Heredity, by Dr. A. B. Richardson, of Columbus; The Neuroses of the Stomach, by Dr. James T. Whittaker, of Cincinnati; The Radical Cure of Inguinal Hernia, by Dr. J. C. Oliver, of Cincinnati; The Technics of Abdominal Supravaginal Hysterectomy, by Dr. J. F. Baldwin, of Columbus; The Tropho-neuroses of Astigmatism, by Dr. J. E. Brown, of Columbus; Some Observations of Malarial Organisms in Close Connection with Typhoid Fever, by Dr. John P. Sawyer, of Cleveland; Diet in Typhoid Fever, by Dr. E. C. Brush, of Zanesville; The Conservative Tendency in Abdominal and Pelvic Surgery, by Dr. C. A. L. Reed, of Cincinnati; The Use and Abuse of Local Medication in Eye Affections, by Dr. J. W. Wright, of Columbus; A Method of Preventing Thirst after Cœliotomy, with a Study of the Urine, by Dr. W. H. Humiston, of Cleveland; Lacrymal Obstruction, by Dr. W. A. Melick, of Zanesville; Seminal Vesiculitis, by Dr. N. Stone Scott, of Cleveland; Concerning the Treatment of Laryngeal Tuberculosis, by Dr. Francis W. Blake, of Columbus; The Contagion and Diagnosis of Scarlet Fever, by Dr. J. S. Haldeman, of Zanesville; and The Modern Status of Specific Urethritis, with its Treatment, by Dr. William T. Corlett, of Cleveland.

The Treatment of Itching of the Vulva.—At a recent meeting of the Berlin Society of Obstetrics and Gynæcology (*Ctrlbl. f. Gynäkol.*, May 2, 1896) Dr. Paul Ruge presented a communication in which, after a brief account of the ætiology of pruritus vulvæ and of various methods of treating it, he gave it as his conviction that the itching almost always depended upon local causes, and that by means of absolute cleansing of the external and internal parts a cure could be brought about almost without exception, even in the severest cases. In recent gonorrhœa also the genitals should be washed energetically with soap and freed from all germs, and this would result in protecting a great many women from chronic gonorrhœal disease. The correction of habitual constipation was an important element in the treatment.

In the discussion, Dr. Martin indorsed what Dr. Ruge had said. He advocated shaving the pubes and applying flowers of sulphur. Dr. Flaischlen thought that such cleansing as Dr. Ruge had spoken of was particularly important as a preliminary to the employment of nitrate of silver. Solutions of the silver salt should be varied in strength according to the case; generally a twenty-per-cent. solution sufficed, but in one case he had been obliged to use a fifty-per-cent. solution to effect a cure. Dr. Glöckner used a one-per-cent. solution of sulphate of zinc, together with a ten-per-cent. ointment of aristol. Dr. Gottschalk recommended a ten-per-cent. ointment of thymenol, also an ointment of menthol and cocaine. In many instances of pregnant women, he thought, the itching was but a local manifestation of a neurosis due to pregnancy, for these patients were very apt to complain of itching of the entire surface of the body. Dr. Bröse spoke of the efficiency of the galvano-faradaic current in overcoming the element of constipation. Dr. Olshausen thought that most cases of pruritus vulvæ depended on diabetes, and fewer on vaginal disease. In still rarer instances the affection must be looked upon as a pure neurosis. Dr. Bodenstein spoke in support of the cleansing treatment. He mentioned a case in which a twenty-per-cent. solution of nitrate of silver had been ineffectual, but a cure had been brought about by washing the skin with a one-per-cent. solution of the same salt.

A Rare Case of Addison's Disease.—The *Indépendance médicale* for April 22d contains an abstract of an article by Dr. David Hansemann, which was published in the *Berliner klinische Wochenschrift*, in which the author relates the following case: The patient was a man, thirty years old, who suffered with intestinal catarrh. He was admitted into the hospital on June 11, 1895, and two weeks later he died. At the autopsy it was ascertained that the suprarenal capsules were joined to the neighboring tissues by fibrous cords. They were diminished in size, and a microscopical examination revealed the absence of their cortical substance. The entire mass was formed of a network of tissue in which were found large cells containing pigment. There were traces of a slight inflammation. The case was evidently one of aplasia of the cortical substance.

A peculiarity in this case, says the writer, is that, with the exception of the absence of the cortical substance of the suprarenal capsules, no marked alterations were found in the body. From this the author concluded that Addison's disease was the cause of the aplasia of the capsules.

Quinine, Salicylic Acid, Antipyrine, Acetanilide, Phenacetine, Thalline, and Alcohol as Antipyretics.—At the fourteenth Congress für innere Medicin, held in Wiesbaden in April, Dr. G. Binz, of Bonn, considered the value of these various antipyretics. An abstract of his remarks is to be found in the *Wiener klinische Rundschau* for April 26th. Up to the year 1867, he said, everybody had supposed that quinine displayed its action through the medium of the nervous system. At that time the speaker had shown its property as a powerful poison to low protoplasms, especially to those which proceeded from the putrefaction of plants; he had further shown that an antipyretic action in general did not depend upon the nervous centres or upon the circulation, and had maintained that a low organism must be the cause of malarial fever and that its rapid cure by means of quinine was due to a paralyzing action of the drug on the parasite. Laveran's discovery and the labors of his followers had demonstrated the correctness of this contention. The reduction of febrile heat in other diseases and the lowering of the temperature of healthy warm-blooded animals was brought about by a direct checking of the activity of cells concerned in metabolism. It appears from subsequent experimental data, says Binz, that the effects of quinine are: 1. Reduction in the number and diminution of the vitality of the leucocytes. 2. Reduction of the nitrogen and sulphur in the urine in healthy and in feverish warm-blooded animals. 3. Lowering of the internal heat of the body in the hot vapor bath. 4. Reduction of heat-production in healthy and in feverish warm-blooded animals in Rubner's calorimeter. Quinine is an antipyretic by virtue of its action on cells—as well on the morbific cells of malarial fever as on the normal cells of the organism. Accordingly, its febrifuge action has both a special and a general character. Further observation will be required to show whether or not it has a direct paralyzing action on other internal diseases.

The properties of salicylic acid are similar to those of quinine. It is a powerful agent against putrefaction and against fermentation, non-poisonous, and not decomposed in the human organism. Its field of action is to cope with the still unknown irritament of acute rheumatism. The weak bond of its chemical union with sodium is no obstacle to it; it is set free by the carbonic acid of inflamed tissues. In some of its effects salicylic acid is very different from quinine; it raises the internal heat in the hot vapor bath, it increases the amount of nitrogen in the urine, and it brings about an increase in the number of leucocytes in the blood. While it agrees with quinine in antagonism to a certain febrile irritament, it differs from it in its action on the cells of the organism, in which it rather resembles the other drugs mentioned.

Antipyrine, unlike quinine and salicylic acid, is but a weak antiseptic and antizymotic. Taken at the beginning of a catarrhal fever, it spreads a perceptible glow over the whole body. Zuntz and his pupils have taught that injury of the corpus striatum may give rise to true fever. This fever does not yield at all to quinine and only slightly to salicylic acid, but very decidedly to antipyrine. Moreover, antipyrine raises the internal temperature in the hot vapor bath. It does not alter the amount of urea in the urine, but increases that of the uric acid. As has been shown in the calorimeter, it heightens the radiation of heat from the skin and at the same time promotes the production of heat internally. It follows from all this that its antipyretic action is by means of the central nervous system, that is to say, of the regulating organs in the brain. It is only a symptomatic antipyretic, but one of rapid action in most fevers. Sedation of a central nervous irritation produced by the cause of the fever is the essence of its antipyretic action.

Acetanilide, phenacetine, and thalline apparently act in the same way, or at least in a similar manner. In the case of thalline, however, there is in addition a certain direct germ-paralyzing action in infective fevers.

Up to the year 1869, alcohol was almost universally believed to be heating in fevers, but the speaker and his pupils showed that this belief was erroneous. Whenever alcohol exerts any appreciable effect on the temperature, it is to lower it. In the puerperal form of septic fever it has been demonstrated that large doses of alcohol reduce the fever rapidly. Its mode of action may be manifold. The speaker showed in 1870, however, that it must act through the nervous system and the circulation. Stimulation of the heart may play the part of heightening the circulation in the skin and thus increasing the radiation of heat. It may be also that large doses of alcohol exert an antiseptic action in the system, and so reduce the vitality of the bacteria. That such a purely chemical action is possible, aside from other factors, has been made evident to Binz by the failure of a post-mortem rise of temperature in animals that he had treated with large doses of alcohol for high fever. Finally, alcohol augments the urinary excretion and may thus lead to the speedy elimination of the toxines that produce the fever and keep it up. Apparently all these factors work in concert, but further experimental investigation is to be desired.

The Physiological Action of Nicouline.—At a recent meeting of the *Société de biologie*, a report of which appears in the *Presse médicale* for April 22d, M. Boinet stated that nicouline, C_5H_4O, exercised its action especially on the nervous centres which were rather frequently congested. It caused, at first, a short period of excitation which was characterized by a temporary agitation, a few convulsive movements, acceleration of the respiration and of the cardiac beats, and meiosis in a very slight degree. These transient symptoms, he said, were especially marked in frogs, and were of variable duration, according to the dose. If it was a large one, dullness, torpor, and stupor soon appeared. The torpor increased and muscular resolution became generalized, and later on paresis occurred in such a degree as to prevent any movement. If the dose was too large, death might be preceded by a few convulsive shocks. The sensibility was deadened and disappeared after motility. Mydriasis was especially pronounced during the last stage. The rectal temperature of the rat and

of the guinea-pig might fall to 86° and even to 77° F. This drug, said M. Boinet, also gave rise to secretory, respiratory, and cardiac symptoms, which indicated its predominant action on the bulb and its stupefying action on the nervous centres.

The toxic doses were variable. Nicouline could produce death in doses of 0·062 of a grain to 120 or 150 grains of the animal's weight. Lizards and frogs, said M. Boinet, resisted doses that were four times as strong.

If, however, this drug was administered in divided doses (0·031 of a grain each) every ten minutes, it would be eliminated in proportion to the dose taken. This fact, said M. Boinet, had led him to make use of its stupefying and paralyzing properties during the agonizing stages of acute tetanus.

Solanum Paniculatum as a Remedy.—According to the *Medicinische-chirurgisches Central-Blatt* for April 24th, the root of this plant is used by the physicians of Brazil, where it grows, as a purgative and deobstruent in disease of the liver and of the spleen, and has lately been a good deal employed as a tonic, alterative, and drastic, particularly in catarrh of the bladder. Although Kobert, who experimented with it, found it inert, Michaelis thinks it is undoubtedly stomachic and useful in biliary colic and in chronic dyspepsia. He gives sixteen drops of a fluid extract three times a day.

The Relations of Medical Examining Boards to the State, to the Schools, and to Each Other.—Dr. William Warren Potter, of Buffalo, president of the National Confederation of State Medical Examining and Licensing Boards, chose this title as the subject of his annual address at the sixth conference of this body, held in Atlanta, on May 4th. He said there were three conditions in medical educational reform on which all progressive physicians could agree—namely, first, there must be a better standard of preliminaries for entrance upon the study of medicine; second, four years is little enough time for medical collegiate training; and, third, separate examination by a State board of examiners, none of whom was a teacher in a medical college, should be a prerequisite for the license to practise medicine. It was understood that such examination could be accorded only to a candidate presenting a diploma from a legally registered school.

He further stated that a high-school course ought to represent a minimum of academic acquirements, and that an entrance examination should be provided by the State for those who did not present a high-school diploma or its equivalent.

He did not favor a national examining board, as had been proposed, but instead thought all the States should be encouraged to establish a common minimum level of requirements below which a physician should not be permitted to practise; then a State license would possess equal value in all the States.

In regard to reciprocity of licensing, Dr. Potter thought it pertinent for those States having equal standards in all respects to agree to this exchange of courtesy by official indorsement of licenses, but other questions were of greater moment just now than reciprocity. Until all standards were equalized and the lowest carried up to the level of the highest, reciprocity would be manifestly unfair.

He urged that the States employ in their medical public offices none but licensed physicians. This, he affirmed, would tend to stimulate a pride in the State license and strengthen the hands of the boards.

He denied that there was antagonism between the schools and the boards, as had been asserted. He said that both were working on parallel lines to accomplish the same purpose, that there could not possibly be any conflict between them, and they were not enemies, but friends.

The medical journals of standing from one end of the country to the other, he affirmed, were rendering great aid to the cause of reform in medical education, and the times were propitious.

He concluded by urging united effort by the friends of medical education, saying: "The reproach cast upon us through a refusal to recognize our diplomas in Europe can not be overcome until we rise in our might and wage a relentless war against ignorance, that shall not cease until an American State license is recognized as a passport to good professional standing in every civilized country in the world."

The Influence of Carbonic Acid on the Sexual Organs.—At a recent meeting of the German Society of Balneology (*Gaz. hebdom. de méd. et de chir.*, April 16, 1896) Dr. Schuster remarked that irritation of the skin produced by bathing in water containing carbonic acid was manifested by a sensation of heat and prickling, with redness, especially pronounced in the region of the genitals. This irritation, he said, was propagated centripetally, and gave rise to modifications in the nervous and vascular systems. As the sexual centres were not very deeply situated, the excitation readily reached both to the medullary centre (that of erection and ejaculation) and to the cerebellar centre (that of imagination). The medicinal use of carbonic acid was indicated, therefore, in all cases of sexual debility not dependent on some organic disease, such as tabes, nephritis, or diabetes; it was directly contraindicated in spermatorrhœa and in the grave forms of paralytic impotence, but it might be of great service in precocious senile impotence. The use of carbonic acid in the form of baths, douches, etc., was indicated also in the anaphrodisia of women. It was of substantial benefit, too, in utero-ovarian neuralgia, in dysmenorrhœa, and in amenorrhœa.

The Treatment of Chronic Appendicitis.—The April number of the *Revue de chirurgie* contains a report of a recent meeting of the Société allemande de chirurgie, at which Dr. Czerny read a paper on this subject. The cure of cases of appendicitis, he said, which were submitted to medical treatment was often only apparent, for dangerous or annoying lesions remained. Among these ulterior symptoms M. Czerny classed internal strangulation, adhesion of the appendix to the gall bladder, intestinal paresis with accumulation of matter in the cæcum, etc.

These troubles, he said, had been studied by Fenger, who designated them by the term "post-appendicitis," and Dr. Czerny considered it very important to recognize this condition, and especially fæcal accumulation.

He called attention particularly to the painful attacks in the cæcal region, during the intervals of which the patient felt well (the intermittent type) or experienced a more or less pronounced uneasiness (the remittent type). The stools were irregular, and frequently a painful spot might be made out between the umbilicus and the iliac spine. Finally, during the attacks a tumor might sometimes be felt, which disappeared or diminished in the intervening stages.

In these conditions, said Dr. Czerny, we should always interfere, for various lesions were to be met with, such as inflammatory tumefactions, adhesions, small abscesses, etc. The operation was sometimes very simple, but occasionally it became very difficult, and it was necessary to resect a bit of the cæcum. The results were excellent, said Dr. Czerny, and in eleven cases in which he had so operated the patients had recovered.

Original Communications.

THE RAPID CURE OF ROTARY-LATERAL CURVATURE OF THE SPINE AND OTHER POSTURAL DEFORMITIES

BY MEANS OF THOROUGH DEVELOPMENT AND CORRECTIVE EXERCISES WITH HEAVY WEIGHTS.*

By JACOB TESCHNER, M. D.,
NEW YORK.

A PAPER † read by me before the Orthopædic Section of the New York Academy of Medicine, May 17, 1895, was entitled The Treatment of Postural Deformities of the Trunk by Means of Rapid and Thorough Physical Development. In that paper I outlined my views concerning the more important ætiological factors in the causation of these deformities. The plan of treatment devised by me was demonstrated by patients, and the cases of nine patients were reported, five of whom were presented. The cases were: One of very marked one-sided deformity of the sterno-costal articulations, cured; two of firmly fixed and severe scoliosis, of many years' standing, with firm and resisting bony and ligamentous changes, markedly improved; and six of ordinary rotary-lateral curvature of the spine, three of which were partially fixed, all cured. These cases were treated for different periods from six weeks to four months.

Since October last I have discharged twelve patients as cured. Such uniformly good results as I have obtained in a class of cases the treatment of which up to the present time has been, at best, very unsatisfactory in the hands of orthopædic surgeons generally, suffice to justify me in maintaining the curability of these deformities. Hence the title of this paper.

I shall present to you the salient points of the treatment, and demonstrate to you the character of the work. I shall also show you the different immediate effects of the corrective exercises upon the trunk as a whole, and especially upon the vertebral column.

Believing that the most important ætiological factor in the causation of these deformities is a weakened or rudimentary condition of the muscular systems generally, or of certain muscular groups in particular, I hold that all the muscles should be developed, educated, and strengthened to their fullest extent, not only in those cases where the tendencies to deformities are known to exist, but also where deformities, whether habitual or fixed, are present, so that they may be cured, improved, or prevented from becoming worse.

I shall quote from my former paper:

"All orthopædists are agreed that exercises, when properly given, are beneficial; but the degree of benefit must necessarily depend upon the muscular ability and the strength and the will of the individual patient to correct, or to partially correct, a faulty attitude or deformity.

"In considering the question of muscular development, I wish to state that I have renounced and discontinued all supporting and immobilizing appliances, as described in my paper,* in any and all cases which I consider amenable to treatment.

"The objection to all supporting appliances is that each and every one will, to a greater or less extent, interfere with the mobility, and in that manner deprive the back, chest, and abdominal muscles of that perfect freedom of action which is a necessary and powerful adjunct in the successful treatment by gymnastics. In the treatment of deformities the aim is and has been to correct the deviations from the normal by such exercises as will educate the different groups of muscles to sufficient and proper exertion to enable the patient to assume as nearly as possible a normal attitude. This muscular education is dependent upon strength and development, without both of which we must largely fail to obtain that proper and vigorous muscular action upon which any beneficial results from corrective exercises must depend. Therefore it is necessary and imperative in all cases which require or are amenable to treatment to attain the highest type of development possible of the entire body, to render the spine mobile in all directions, and also to develop the full strength of each patient. Individual work only can accomplish this end, because it is of the highest importance to carefully watch every movement of the patient, and to immediately correct any and all errors in attitude, deportment, or exercise."

"The important points to be observed in the development of strength and muscle are correct attitude, ease and grace and rhythm of motion, and automatic and independent and full action of only those groups of muscles which are called into play by the performance of each separate exercise, and each group of muscles automatically exercised until it is thoroughly tired. No muscle can be properly developed unless it is tired by frequent and uninterrupted automatic contractions and relaxations.

"All exercises with light weights should be executed in a closely fitting jersey suit before a mirror, so that the patients can hold themselves in the proper position while going through the different movements. By doing this they can see when the position is faulty, either by reason of a sagging of the trunk or through the lack of co-ordination of all those muscles which are to remain fixed while certain groups are in action, and they can correct their faults. It also materially assists in the acquisition of grace and ease in working automatically. Exercise in this manner brings about a forced and habitually corrected pose and carriage, while the strength and muscles necessary to maintain a correct position are being developed.

Taking the standpoint that (1) lack of strength and lack of muscular development, (2) habitual faulty position with superimposed weight, and (3) lack of co-ordinating power or lack of muscular control are the more potent

* Read before the tenth annual meeting of the American Orthopædic Association, held in Buffalo, May 19, 20, and 21, 1896.

† *Annals of Surgery*, Philadelphia and London, August, 1895.

* Observations on the Rotary-Lateral Curvature of the Spine, with Special Reference to the Ætiology and Treatment. Read before the Surgical Section of the Pan-American Medical Congress, at Washington, D. C., September 5, 1893. *Medical Record*, December 16, 1893.

ætiological factors in producing deformities, it is and has been my aim—and I believe that I have succeeded—in correcting deformities by reversing these conditions: that is, (1) by developing the muscles and their strength; (2) by acquiring an habitually corrected position with superimposed weight; and (3) by educating all the muscles to proper co-ordination and to complete control.

"A pair of dumb-bells weighing from half a pound to five pounds are used in a series of twenty-six exercises for the development of the muscles."

In addition to these development exercises, I give the patients work with heavy bars and bells at each visit to my office. The weight of the bars and bells and the number of times that each heavy weight or pair of weights is handled, depend upon the strength, capacity, and upon the endurance of the individual. It is my practice to put each patient to his or her individual limit of work at each visit, and that limit is invariably extended at each succeeding visit, unless the patient is indisposed. The strength and endurance, as shown by the amount of weight handled, and the number of times each weight and set of weights are handled, increases very decidedly in every case from one visit to another. This increase is largely dependent upon correctness of posture and precision in the work. This is a matter of record in all my cases, as I keep a tabulated statement of all the work, designating the weights used and the exact number of times each exercise has been performed. This heavy work develops the strength to the fullest extent, and it is by means of this work that I have been enabled to correct severe deformities even where bony and ligamentous changes and marked rotation were present. This is my corrective work, which I will demonstrate:

Bells, weighing from five to eighty pounds each, and steel bars and bar bells, weighing from twenty-six to over one hundred and eleven pounds, are used in different ways. Bells are pushed from the shoulders above the head alternately as often as the patient can.

"The patient is instructed to swing a heavy bell with one hand from the floor above the head and down again, the elbow and wrist being fixed, and the motion repeated as often as possible in a systematic manner; then with the other hand the same number of times, and later with both. This exerts all the extensor muscles from the toes to the head in rapid succession.

"When a heavy bell is pushed or swung above the head on the side opposite the scoliosis, the action of the back muscles, to sustain the weight and equilibrium, is such as to cause the curved spine to approximate a straight line. A similar result is produced when a heavy weight is held by the side of the erect body on the scoliotic side, the arm being at full length.

"When a heavy bar is raised above the head with both hands, the patient must fix the eyes upon the middle of the bar to maintain an equilibrium. This necessitates the bending of the head backward, the straightening and hyperextending of the spine, and consequently correcting a faulty position with a weight superimposed. The heavier the weight put above the head, whether with one hand or with two, the more the patient must exert himself or herself to attain and maintain a correct or an improved attitude in order to sustain the equilibrium. (By an improved attitude I mean the greatest amount of correction of the deviation of the spine that the fixation of a deformity will allow of.) Hence, the greater the weight, the more forcible the actions of the muscles become, and the greater the temporary reduction of a deformity. It is by means of frequent and forcible temporary reductions of deformities, by voluntary muscular action, that we can hope to improve, and do improve, those cases which are amenable to any form of active treatment.

"When a patient, lying supine upon the floor, raises a heavy bar above the head so that the arms are perpendicular to the floor, the weight of the bar, the position and weight of the body, and the action of the muscles tend to broaden the entire back and shoulders, and a slow downward movement tends to widen the entire chest, and most markedly at the shoulders. The frequent repetition of the upward and downward movement plays an important part in the rapid development of the chest and back. Pushing the bells above the head, swinging them with each hand separately and with both hands together, raising a bar above the head, standing and lying down, and the exercises before enumerated, constitute one day's work.

"As the amount of work performed by a patient depends upon the last previous record of that patient, that record must be improved upon at each succeeding visit, unless there be a good and sufficient reason to the contrary. Most patients can well stand three treatments a week. In mild, habitual cases improvement in deportment is noticed by the patients' relatives and friends and by the patients themselves within the first two weeks. In those cases two months' treatment usually suffice to effect a complete cure. In the more severe cases it is not and can not be expected to attain such rapid results, but a certain appreciable improvement is effected, and the amount of improvement depends upon the persistent continuance of the treatment. Where there is a fixed rotation of long standing, with bony and ligamentous changes, the prospects are not so good; but even in those cases I am sure that I have shown considerable improvement in their conditions.

"Patients are not permitted to wear supports of any kind, not even corsets. They should not exercise until at least two hours after a meal, nor when menstruating. The general health is improved by the exercises; the patients gain in height and weight. The girths and breadth measurements, chest depth, strength tests, and lung capacity are generally increased, and the depth of the abdomen is usually decreased. In some cases, especially those of undersized patients, the increase in height is very rapid, and it is certainly more than the increase by ordinary growth. There were marked cases of flat-foot which were benefited, as will be seen by reference to the charts. The flat feet became shorter through the exercises by the increase in depth of the inner arches.

"This system of work should only be applied by the physician, and he must himself have been trained to the work to intelligently guide those whom he seeks to benefit.

The work must be careful, systematic, and regular. Perfunctory work will not do."

To justify the title of this paper—*i. e.*, The Rapid Cure, etc.—I point to the results that I have attained (of twenty-one patients treated, nineteen discharged cured, and two very much improved when treatment ceased), and I wish to report one case (with photographs) of marked deformity in which an almost complete obliteration of that deformity was obtained after three weeks of treatment.

Several of the gentlemen present saw the patient at a meeting of the Metropolitan Medical Society of New York, at my residence, in March last.

B. B., aged fifteen years, February 12, 1896.

More than a year ago the mother noticed that the patient stooped, and attributed that attitude to carelessness. About two months ago the mother noticed that the left hip was much larger and higher than the other. For the past few weeks the patient has complained of severe backache, so that she was uncomfortable in a sitting posture. The patient was examined by Dr. I. Oppenheimer, who referred her to me for treatment.

Her menstruation is regular, but she complains of severe dysmenorrhœa, which compels her to take to her bed for a few days at the appearance of each menstrual period.

FIG. 1.—Before treatment, February 24, 1896.

FIG. 2.—March 25, 1896, after three weeks of actual treatment.

Examination.—Patient is intensely anæmic. There is a marked lumbar C curve to the right, the greatest deviation being an inch from the median line (plumb line). Both scapulæ are prominent, the right more than the left. Ilio-costal curve well marked on the right side, obliterated on the left. Patient has marked abduction and pronation of the right foot, with occasional pain. There is no spasm. Wears the sole and heel down on the inside.

Chicken breast; large depression below clavicles; stoop shoulders well marked; right shoulder higher than the left, and head very poorly poised. Patient has about ten degrees of rotation.

Ordered the shoe of the right foot to be built up a quarter of an inch on the inside of the sole, and advised developmental and corrective treatment.

February 24th.—Patient menstruated last week with great suffering for about ten days. She begins treatment to-day; is extremely weak and very awkward. (She fainted twice while being photographed.)

March 11th.—Examination of the patient after her eighth treatment (a little less than three weeks after treatment was begun) shows the deformity almost obliterated (see photographs). There is no deviation of the spine, the scapulæ are

FIG. 3.—Profile showing eminence at upper portion indicative of rotation, February 24, 1896.

FIG. 4.—March 25, 1896, after three weeks of actual treatment, showing disappearance of rotation.

not prominent, the ilio-costal curves are about equalized, the shoulders are of equal height, the rotation of the spine has disappeared, and the right foot is no longer abducted.

18th.—Patient menstruated last week without the slightest pain, recovering fully in four days.

April 18th.—Patient began to menstruate on April 11th, and the flow continued until the 15th, normally and without pain.

The patient was discharged as completely cured on May 2d, after twenty-six treatments.

FIG. 5.—Showing the contracted chest and prominence of the left hip, February 24, 1896.

FIG. 6.—Showing improvement in the conformation of the chest and equalization of the ilio-costal curves, March 25, 1896.

In closing I wish to call your attention to certain facts which I have observed in the treatment of my cases, and

which should commend this system to the preference of all other methods.

1. It is rapid—improvement being noticed by the patients, their relatives, and myself within a week or ten days after treatment has begun.

2. The improvement in general health and the increase of weight.

3. The wholesome effect upon the nervous system by the cultivation of muscular precision and endurance.

4. The marked increase in the lung capacity.

5. The beneficial effect upon the heart's action, as shown by the diminished frequency of the pulse and the increase of pulse pressure after each treatment, as shown by Basch's sphygmomanometer.

6. That all the patients continue to improve generally and muscularly long after active treatment has ceased.

In defending this heavy work against the adverse criticisms of those who might condemn it, either from their hearsay knowledge of its baneful effects or from their own observations of athletes who have been "trained down" for special work, I cite the following facts, viz.:

The general health has been good. The heart's action has become more vigorous, as shown by the diminished frequency of the pulse and the increased pressure indicated by Basch's sphygmomanometer.

The weights, chest capacities, chest depths, girths, breadths, and strength tests are generally increased, the abdominal depths are decreased, and the feet, the foundation of correct posture, are improved, inasmuch as all flat feet become shorter and the normal feet grow.

All this should prove that they are not overworked.

134 East Sixty-first Street.

CHANCRES FOUND IN UNUSUAL LOCALITIES.

By E. HARRISON GRIFFIN, M. D.,
LECTURER ON DISEASES OF THE THROAT AND NOSE, BELLEVUE HOSPITAL MEDICAL COLLEGE; ATTENDING SURGEON TO THE THROAT AND NOSE CLASS OF BELLEVUE HOSPITAL OUTDOOR DEPARTMENT, NEW YORK.

In the *Medical Record* for October 1, 1892, I reported twelve hundred cases of syphilis of the throat that had come under my observation. Twelve of these cases were of the initial lesion; two of them were situated on the tonsil, nine were located on either the upper or lower lip, and one on the lower portion of the tongue.

From that time I have collected the histories of twenty cases where the location of the primary chancre is more than interesting. All of these cases came under my notice either in my private practice or at my clinic at Bellevue Hospital Outdoor Poor Department.

All of these cases that I report are extremely rare. In a conversation with a medical friend who has a large private and clinic practice, and who devotes his time principally to venereal diseases, he remarked that he had seen in a course of fourteen years only two cases of chancre situated elsewhere than on the penis or vulva.

Dr. Bulkley has reported some very interesting cases of chancres situated outside of their general locality.

Bosworth finds that Bogolguboff, out of seven hundred and fifty-three cases of chancre, found the primary lesion upon the tonsil in two cases. Schadek collected sixty-eight cases of the initial lesion occurring in the fauces. Of these sixty-eight, however, in twenty-two the histories are so incomplete that a diagnosis is open to question. Of forty-six remaining, in thirty-four the lesion was located upon the tonsil, and in twelve in other parts of the fauces.

Peterson, Schirajeu, Gonduoin, Hulot, Spellman, Wigglesworth, Rollet, Desnos, Belhomme and Martin, Julien, Mackenzie, Bartholomy, Muklen, Boeck, Lavallée, Hal, Degendre, Brocq, Bumstead, Perandrau, Donaldson, Taylor, Thomaschewsky, Fox, Rabitsch, and Tschisjakow all report cases of the initial lesion occurring in the region of the mouth.

The primary lesion of the mouth or fauces is undoubtedly extremely rare, but I believe it is often overlooked and mistaken for some other affection. I base this opinion upon cases that have come under my care after the affection had been incorrectly diagnosticated by some other practitioner.

The mucous patch is generally the means of conveying the syphilitic poison, although in my previous article I reported the case of three children, where the first child, aged nine years, was inoculated with a chancre of the lip from drinking out of a tin pail that had some syphilitic virus on its edges. His brother caught a chancre of the tonsil by sucking a stick of candy after his diseased brother had bitten it.

Thus in this case the chancre inoculation took place directly from the chancre virus. The sister of these boys was inoculated with a chancre of the lip by kissing, showing another case of direct inoculation from a chancre.

I had one case of syphilis in a boy, where the initial lesion was situated on the lip, brought to me as a case of mumps; the bubo on the side of his neck had led to this error in diagnosis.

Very often the bubo is the cause of bringing the case under the care of a physician. The chancre generally gives very little if any pain, even if it is situated on the tonsil or tongue, but the bubo that generally follows the primary infection is painful in deglutition and unsightly in appearance. The bubo is present in almost every case, although I have seen cases of primary inoculation of the mouth where the bubo was absent. These cases are the exception and not the rule. When the bubo is absent it is wise to wait till a well-marked syphilitic eruption makes its appearance on the skin.

The bubo is situated on the side corresponding to the chancre. The submaxillary glands are the ones generally involved, although the subhyoid and post-cervical will be generally found swollen.

The induration appears during the first or second week of the chancre. This induration occurs earlier when the chancre is situated in the region of the mouth. The bubo is hard to the touch and seems like one hard gland; as the chancre heals, the bubo subdivides and appears like several glands under the touch.

In strumous cases the glands are apt to be larger than

where the chancre is grafted upon a previously healthy constitution.

I have had cases where the bubo was as large as a hen's egg, while in other cases it was very much smaller. The bubo may be on one or each side of the neck, but generally the glands of both sides participate in the infection.

I have never had a case where the bubo broke down into an abscess; it generally yields readily to treatment, and subsides in the space of three weeks after the internal treatment has begun.

Keyes speaks of the bubo as a constant symptom attending syphilitic chancre; it is the rule, but there are exceptions; one exception I shall show under my report of cases.

The eruption makes its appearance much earlier when the lesion is situated in the vicinity of the buccal cavity. I have seen the eruption develop six days after the primary chancre had made its appearance. The severity of this syphilide is about the same as if the inoculation had taken place on the usual part of the body, and depends upon the constitution it attacks.

The worst case of tubercular syphilis I ever saw, where the spots covered the entire back and front of the chest and ulcerated in the fourth week from the date of the chancre, came from a chancre of the lip, received from a kiss from the patient's husband, who had mucous patches of the tongue and was in the third year of his syphilis.

With this exception, all the other cases pursued the same course as if the inoculation had taken place in the ordinary channel.

The sore, if it is located on the tonsil, is liable to be mistaken for a secondary ulceration of syphilis. This diagnosis is easily cleared by the quick appearance of the bubo, which is generally absent in secondary lesions, and also of the eruption.

In all of these cases that I report I have based my diagnosis upon the history of the case, the appearance of the sore, and the presence of the bubo, and I failed to treat any of the cases till the eruption made its appearance to substantiate my diagnosis.

The possessor of syphilis can come by his birthright honestly or by a chance inoculation. I am not at all surprised at the number of cases that I herein report and have collected in such a short space of time; but what does surprise me is that there are not more of these cases reported by the profession at large. They must exist and the diagnosis be misplaced. I make this statement in view of the cases that have come under my observation.

One lady was sent to me on account of a hoarseness that interfered with her singing voice. An examination of her throat showed her tongue covered with mucous patches. This lady was of a very lovable disposition, to quote her own words, and was accustomed to greet every one she knew by a kiss. She lived in a large, fashionable boarding house and had a large circle of friends to treat to this luxury; upon babies and children she especially doted. She was very much surprised when I told her that her kisses were enough to inoculate a whole regiment of soldiers with the syphilitic poison.

I do not know if syphilis is a stimulus to kisses; but it is a clinical fact that the worse the mouth is affected with syphilitic virus the more anxious my patients have been to impart the kiss among their friends. I have never found a warning do any good in the majority of these cases; the patients will be careful for a day or two, when they will break through the injunctions and be all the more anxious to kiss and be kissed.

The first case that came under my observation since my last report occurred in August, 1894.

Case I.—A girl, aged eighteen years, who had been employed in a store in Canada, applied to me for a sore on her lower lip. The sore had lasted for over two weeks; it was of about the size of a dime. The lip was much swollen and the edges of the sore were indurated; there was no pain, but the swelling of the lip made it difficult for her to talk. The submaxillary glands were enlarged on the right side—the side nearest the sore. She was covered with an eruption the character of which was unmistakable. My diagnosis was chancre of the lip. It healed readily under mercurial treatment, which also subdued the submaxillary bubo.

The history of this case was quite interesting. In the store in which the patient was employed it was customary for all the hands to drink out of one cup. The proprietor, his son, and about four employees became inoculated with chancre of the lip. The source of the contagion was traced to one of the working hands, who had mucous patches of the mouth. Some of the virus had been left on the edge of the tin cup, and the next comer carried the poison to some abrasion of the mucous membrane, producing an inoculation of a chancre.

The tin cup is a relic of barbarism; the way the edge of the tin is bent over a piece of wire makes the joining a perfect hotbed for the lodgment of syphilitic virus. I pointed this fact out in my last report.

Case II.—A girl, aged eighteen years, complained of a sore on the centre of the upper anterior third of the tongue. The subhyoid glands were swollen and painful to the touch. There was slight enlargement of the submaxillary on each side. I could obtain no history in this case.

An examination of the vulva showed the hymen unruptured. A syphilitic eruption made its appearance about the tenth day after I saw the case, or about the third week from the appearance of the sore. The buboes and eruption disappeared under the use of mercury. Mucous patches of the mouth have been present at times during the treatment of this case. I think the inoculation took place in this case by some innocent means, perhaps by putting money, a pencil, or some object that carried the syphilitic virus to the mouth.

Case III.—A girl, aged eighteen years, living at home with her parents, complained of a large sore on the centre of the lower lip, and had marked submaxillary buboes. The sore was of about the size of a ten-cent piece; the lip was much swollen; the edges of the sore were indurated and covered with a sero-sanguinolent fluid.

The bubo on one side of her neck was very large and painful, almost as big as an egg. The bubo was the reason she applied for treatment. The sore on her lip she considered only a little fever sore and it gave her no concern.

A syphilitic eruption made its appearance in this case about the seventh day, or the twelfth day from the date of the appearance of the chancre. She gave a history of spending several days at a friend's house, and remembered one of

the party who had sores in the mouth. The inoculation took place from a kiss; but where the kiss was placed is open to question.

Case IV.—A woman, aged twenty-five years, consulted me for a large ulcer, with indurated edges, covered with a heavy pus. The sore had been burned with nitrate of silver and its appearance was red and angry; there were submaxillary buboes and enlargement of the subhyoid glands.

The angry appearance of the ulcer was due to the treatment it had received. It had been scraped, burned, and then scraped again before I saw the case. A syphilitic eruption was on her body. The patient was also in the third month of pregnancy.

This patient had been living a life of the town; but the sore on her lip worried her and led her to seek another occupation. She chose that of nurse to an invalid. She employed her time during the day in picking the chancre with her fingers and waiting upon her patient. The family physician was in attendance upon this invalid and allowed this diseased woman to scatter her venereal poison through a home.

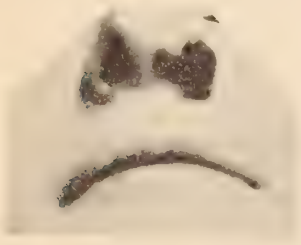


Fig. 1.
Chancre of the nose (Case V).

When I saw the case I made the woman relinquish her position, which was in one of the neighboring towns, and put her under as strict surveillance as possible. I might add that when she recovered from the initial lesion she again took up her first means of livelihood.

Case V.—A woman applied at the clinic for treatment for a round ulcer, of the size of a ten-cent piece, situated on the lower border of the left side of the nose. I found the part very much congested and swollen, the edges of the ulcer indurated, and the centre filled with pus; there was sligth enlargement of the submaxillary glands. The patient gave a history of being married and of never having had any venereal disease. I put her on the use of a placebo of rhubarb and soda and awaited developments. In the second week after I saw the case a well-marked roseola made its appearance, substantiating the diagnosis.

The sore healed up under the internal administration of mercury. Mucous patches afterward made their appearance in the mouth.

Case VI.—A woman applied on account of a large ulcer situated on the left side of the lower lip, with marked sub-

Fig. 2.
Chancre of the lip (Case VI).

maxillary enlargement, the edges of the sore indurated and the lip swollen. A papular syphilitic eruption was present on her body.

She had been living with a man who had afterward left her for a visit to the country. In his absence she was kissed by a friend of his who was suffering from a sore throat. Upon inquiry she found that he had syphilis. I only saw this patient once. I transferred her to the City Hospital.

Case VII.—A woman, aged thirty-two years, married, applied on account of a sore on her lower lip; the submaxillary glands of the right side were swollen and painful in deglutition. The sore had now existed for about two weeks, and the edges were hard and indurated. I warned her not to kiss her husband or any one else. She had no children. I examined her husband and found no marks of any syphilitic infection.

Four days after her first visit a maculated syphilitic eruption made its appearance.

Case VIII.—In three weeks from the visit of this patient her husband came to my office with an erosion of the lip, the sore on the opposite side to that of his wife's. An enlargement of the submaxillary glands made its appearance later, also a well-marked syphilitic roseola.

I could obtain no history from the wife as to how she had received her infection, but it must have been by coming in contact with some syphilitic virus, presumably by a kiss from some female friend.

I think there are many of these cases, only they are not recognized until the woman miscarries a number of times without known cause, or a child is born later with all the hereditary signs of transmitted syphilis. I have seen and taken the histories of any number of these cases, a father or mother denying all history of any past infection, but a child so well stamped with the syphilitic marks that no physician could mistake the diagnosis.

Fig. 3.
Chancre of the tongue (Case IX).

Case IX.—A man, aged twenty-three years, applied on account of a swelling on the right side of his neck. He thought it might be the mumps. The tumor had begun three days before and had now reached the size of an egg. It caused very little inconvenience, except in deglutition.

An examination of his tongue showed a large oval sore, situated on the upper portion and in the median line. The edges of the sore were indurated and the centre was filled with pus.

The chancre had existed now for ten days. I watched the case, and about the second week a well-marked syphilitic roseola made its appearance. The eruption and chancre disappeared under the internal administration of mercury.

Pointed questions were asked in regard to how he had obtained the inoculation. He denied anything criminal.

Fig. 4.
Chancre of the tongue (Case X).

Case X.—A woman, aged forty-five years, married, a midwife, applied at my clinic complaining of a sore tongue. She had been treated for indigestion before I saw her, but the medication had failed to give her tongue any relief.

An examination showed a large indurated ulcer, situated on the upper portion of the tongue, a little to the left side. The ulcer was bathed in a sero-sanguinolent fluid; it caused no pain, only it was a little annoying. She called my attention to a small swelling under her chin and at the side of her neck. The sore on her tongue had now lasted for over a month. An examination of her body showed a well-developed syphilitic eruption. Her hair was beginning to come out, and she suffered from slight attacks of fever and chill, a very common symptom during the eruptive stage of syphilis. The symptoms disappeared under the internal administration of mercury.

The only history I could obtain was that she gave massage to a woman who had a sore throat; this person had kissed her, and later on the sore had developed on the tongue. Her former physician had diagnosticated it as a symptom of her stomach being deranged. The means of contagion is questionable.

Case XI.—A girl, aged eighteen years, applied at the clinic on account of a sore throat and a lump on the side of the neck. The throat had been sore for three weeks; the lump at the side of the neck was painful in deglutition.

Fig. 5.
Chancre of the tonsil (Case XI).

An examination of the buccal cavity showed both tonsils red and congested and very much swollen. Both were covered with mucous patches. On the right tonsil, toward its lower portion, was a well-marked ulcer of about the size of a large pea, with indurated edges and filled with pus. The chancre gave her very little pain.

An examination of her skin showed a well-marked syphilitic roseola.

This case is interesting, as it shows that a chancre may be followed quickly by a mucous patch, and that the two diagnostic lesions may be situated side by side at the same time.

An inoculation of chancre in the region of the mouth generally takes place by the syphilitic poison finding an entrance into the economy by an abrasion or a fissure in the mucous membrane; but in the tonsil the crypts of the follicles are a favorite site for the lodgment of syphilitic virus, the inoculation taking place by the virus being held in position, and not necessarily by a local abrasion of the tonsil. Bosworth makes this point in his book. The patient gave a history of being unmarried and of having consorted with various members of the male sex. The location of the chancre and the history of the case point to but one way of contagion.

Fig. 6.
Chancre of the base of the tongue (Case XII).

Case XII.—A married woman, aged twenty-nine years, was brought to me by Dr. Sharp in consultation. The case had been treated for ordinary sore throat before she applied to Dr. Sharp for treatment. He had diagnosticated a specific lesion of the tongue, and had brought the patient to have me confirm his diagnosis. She complained of a difficulty in swallowing and a tenderness at the back of the throat. An examination of the throat by the spatula showed the pharynx red and congested, but no distinct syphilitic lesion.

An examination by the laryngeal mirror showed a large, oval ulcer, about half an inch in diameter, situated at the extreme base of the tongue. The only way in which this sore could be viewed was by the aid of the laryngoscope. The edges of the ulcer were indurated, and the parts around the sore red and swollen. She had noticed the tenderness in her throat for about three or four weeks. I went through the history of the case and failed to obtain any indication of a past syphilis. There was no submaxillary or subhyoid bubo. An examination of the skin at this period was suggestive, but not diagnostic.

I placed the patient under placebo treatment—namely, Dobell's solution for the throat, and a mixture of rhubarb and soda to take inwardly—till I was able to clear up the diagnosis.

The unusual site of the sore and the absence of any bubo led me to distinguish between an initial and a secondary lesion of syphilis.

The first examination of the skin, as I have before stated, was suggestive; upon her second visit, four days afterward, it was diagnostic. A papular syphilitic eruption was beginning to appear. Other symptoms occurred which established my diagnosis of primary chancre of the base of the tongue.

This is the only case where I have ever seen the chancre so low down on the tongue, and I believe it is the only case on record of primary inoculation taking place so far down in this region. The introduction of the virus must have taken place through some local abrasion that existed previously on this part of the tongue. How the virus was introduced into the mouth I was unable to ascertain. This case is instructive, as it shows a primary chancre can exist without a bubo, but when the latter is absent special care should always be used to discriminate in the diagnosis.

Fig. 7.
Chancre of the lip (Case XV).

Case XIII.—A girl, aged eighteen years, a prostitute, applied on account of a sore throat and enlarged glands on the left side of the neck. An examination of her throat showed the tonsils red and congested, with an indurated sore situated on the upper portion of the left tonsil. A vesicular syphi-

litic eruption made its appearance two weeks after I first saw the case. The mode of contagion was reluctantly explained. The eruption and bubo disappeared under treatment. Mucous patches afterward made their appearance in the mouth and on the vulva. Alopecia was also present.

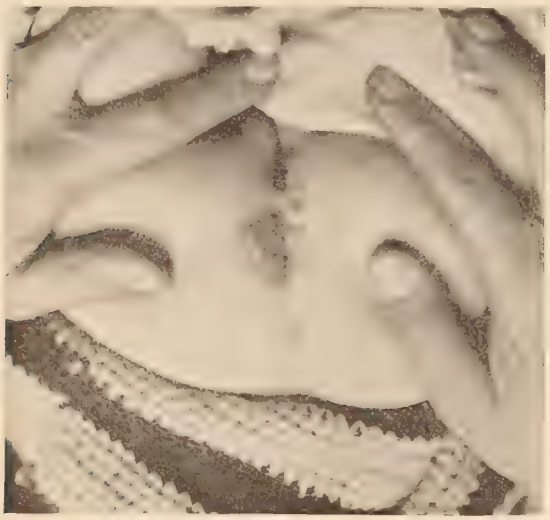


Fig. 8.
Chancre of the anus (Case XVII).

This patient was following out her business as a prostitute while the initial lesion was in full blast, infecting so many men a day for her breakfast, dinner, and lunch, for the simple reason that the law fails to recognize this disease and there are no statutes that can be put into force in such a case as this.

Case XIV.—A man, aged twenty-six years, occupied a room with a friend who had syphilis of the throat. They both slept in the same bed, but kept their towels in separate parts of the room; the patient never used a pipe, but smoked either cigars or cigarettes.

Fig. 9.
Chancre of the hand (Case XIX).

He applied to me complaining of a sore on his gum of about the size of a pea in circumference, situated just below the lower incisor tooth on the right side, a marked submaxillary bubo, and enlargement of the glands about the neck in general. A papular syphilitic roseola followed, with alopecia and mucous patches of the tongue and tonsil.

The patient thought that his friend might have used his toothbrush, and that he might have brought the contagion to his mouth in this manner. This is the only history I could obtain of the means of contagion; possibly it is correct.

Case XV.—A man, an inveterate cigarette smoker, applied on account of a small sore on his lower lip situated toward the right side. He had been in rather doubtful company, and applied to me for a diagnosis. The sore looked like an ordinary fever blister denuded of the external skin. The surface was moist, but not covered with pus or any fluid.

Fig. 10.
Chancre of the upper lip (Case XX).

I kept the patient under observation for ten days before I gave a diagnosis. Upon the third day after his first visit he complained of a tenderness of the glands about the angle of the lower jaw. These began to swell until they reached the size of a small bantam's egg and were very painful to the touch. Upon the second week after his first visit a well-marked syphilitic roseola made its appearance.

The progress of the chancre on his lip was interesting: at first it looked like a small fever blister; in five days after his first visit it began to have hard edges; for a few days afterward it was covered with a sero-sanguineous fluid. After I had substantiated my diagnosis of the bubo and the eruption, I placed him under mercurial treatment, which healed the sore in ten days. Mucous patches afterward occurred on the tonsil. This patient was very much annoyed by night sweats and fever during his eruption.

Case XVI.—A respectable young woman applied at the Bellevue Clinic complaining of a sore on her nipple. She had just recovered from a confinement and was nursing a healthy child. Having an abundance of milk in her breast, she had taken a child to nurse, that she might have a little more money for her expenses. The second child was troubled with a sore throat. The sore on her nipple was of about the size of a ten-cent piece, had hard edges, and secreted a mucopus. An examination of the axilla showed enlarged glands. A syphilitic roseola afterward made its appearance.

This is interesting, as it shows a chancre may be caught from a child suffering from hereditary syphilis, in the shape of a mucous patch of the mouth.

Case XVII.—A child, two years and two months old, was brought to Dr. Clarence Sharp with a large sore on her anus. I saw this case with Dr. Sharp in consultation. The sore had been on the part for two weeks and was of about the size of a bean. The edges were hard and the surrounding parts red and congested. The bottom of the sore was smooth, shining, and covered with a slight sero-sanguinolent fluid. The child complained very little of the sore, and the mother thought that it might have come from the napkin in the shape of a chap. Buboes were present in the inguinal region.

In three weeks after the first visit a syphilitic roseola made its appearance. The local lesions disappeared under mercury treatment.

The means of contagion in this case were through the grandfather, aged seventy, who was suffering from an initial lesion of the penis. Some cloths he had used had been taken to wipe the child with, and the virus had been carried to this innocent baby.

Still the law will not recognize the fact that this disease is rampant, and confine the houses of this traffic to certain localities and make their inmates submit to examinations at certain intervals, and when they are diseased confine them to a hospital till all local lesions are cured, make them apply afterward for the space of three years every week for examination of the vagina and buccal cavity, and, if they do not so apply, make their absence punishable by a fine.

Case XVIII.—An undersized Italian boy, aged ten years, was taken by three Italians in a rowboat to an island in the vicinity of New York. The three men committed sodomy upon this child and gave him a chancre of the anus. Mucous patches were present in the mouth when I saw the case, and the child was covered with a syphilitic roseola; there were marked buboes in the inguinal regions.

Case XIX.—(Reported through the courtesy of Dr. Sharp.) A man, aged thirty-one years, received a bite on the lower portion of the hand while engaged in a fight with a male companion. As the skin was only broken he paid no attention to it. Two weeks afterward a small lump made its appearance. This developed into an ulceration with hard edges. The hand was stiff and swollen, with marked enlargement of the epitrochlear glands.

The sore had been treated by a surgeon, before Dr. Sharp saw the case, who scraped it and by this means tried to make it heal. Dr. Sharp diagnosticated chancre of the hand when he saw the case, and substantiated it by the bubo in the epitrochlear region and by the marked papular syphilitic roseola which followed. Mucous patches made their appearance in the mouth and in the throat. Alopecia was also present. The local lesions healed under the internal use of mercury.

Case XX.—A woman, a teacher in one of our public schools, applied for an innocent-looking sore on her upper lip of about the size of an old-fashioned five-cent silver piece. This patient had used a preparation of borax, and had applied vaseline to the sore, trying to heal it. Finding this means of no avail, she had applied for treatment. She did not know the nature of the sore and thought it only a small fever blister or a chap on her lip. A small bubo was present on the right side of her neck. The sore looked more like an erosion and could easily have been overlooked.

On the portion of the lip where it touched the gum the mucous membrane was abraded, but on the outside of the lip the mucous membrane was covered by a small, hard scab. An examination of her body showed the beginning of a syphilitic roseola. The sore had been present on her lips for three weeks when I first saw the case. I was unable to find out the means of contagion in this case. The patient denied strenuously ever having known a man carnally, and I firmly believe her.

The means of contagion in this case were indubitable. She did not kiss her pupils in the school, which, by the way, should be forbidden by the board of education, to protect both the scholar and the teacher, and also to wipe out in part this means of greeting, which to-day is a relic of past ages and of barbarism, and a salient mode of carrying an infection which, if not brought under a physician's care, not only kills but carries its imprints to generations to come and in time will wipe a family out of existence.

The importance of such a law being drafted may be emphasized by the report of the three children I made some years ago with the primary lesion of the mouth.

Two of the children attended school, and a kiss with an affectionate teacher, followed by an inoculation, would have been enough to spread the disease through over a hundred families at the start, and the disease could have been curtailed no one knows where. This teacher kissed her lady friends, so probably some one of her friends lodged the syphilitic virus in a crack on her lip during this affectionate greeting and was the means of her inoculation.

Can any one say this patient had not inoculated other people by a kiss before she applied for treatment? For three weeks she was performing her usual vocation, attending school, visiting her friends, and giving the fashionable greeting of to-day upon seeing or leaving a friend—a kiss.

The laity—I mean by this the clergy, the politician, and the people who have not made a study of syphilis—look upon it as a venereal disease. It is not a venereal disease. Venereal disease is one produced by excess in venery. For this reason the law has been backward in framing a code that could govern these cases. We, as physicians, are compelled to report all our cases of scarlet fever, measles, and diphtheria to the board of health; but if a prostitute, too poor to suspend her traffic while she is thus diseased, or unwilling to do so, applies to us for treatment, we can do nothing except explain to her that she is in danger of infecting every companion she sees while she is thus diseased.

An assemblyman at Albany, now a judge, once told me there was an excellent bill up to govern the matter of prostitution. He told me that the bill could not pass. In answer to my question why, he said if the Republicans voted for the bill, all the Democratic ministers in New York would say that the Republicans were trying to license vice and make the daughters of respectable men legalized prostitutes. If the Democrats brought up such a bill, the Republicans would follow the same cry. Thus the hands of both parties are tied, under the foolish belief that prostitution can be stopped.

I know of but one way to stop prostitution, and that would take years—that is, by castrating every male child and spaying every woman—and when the human race had ceased to exist prostitution would also succumb. But so long as man and woman are furnished with the organs of increase, so long will prostitution flourish, as it did years ago in separate parts of the city, as to-day in all parts, from the lowest tenement house to the stylish flat and brownstone houses in the best part of the city.

If the people of New York are too good to license this vice and have each and every inmate of these houses brought under the inspection of a licensed physician at certain intervals, let them say how they are going to prevent the spread of this disease among the innocent.

Those people who are opposed to the licensing sysetm and the confinement of these houses to certain districts are responsible in part for the spread of this disease among innocent people, who shudder at the mere name of syphilis.

These twenty cases have been seen by me during the last two years. My power of diagnosis of this disease is no better to-day than it was ten years ago, yet it took me ten years to compile the twelve initial lesions I reported in my last article, and only two years to collect these twenty cases of initial lesion. Surely syphilis is on the increase.

No one knows, except one who does this special work, how much syphilis is about. It penetrates all society, some by direct contact by connection, with others it is grafted by an innocent kiss or perhaps by a stick of candy or a toothbrush, by grease-paint, or by drinking out of a cup. Yet the lawmakers, the clergy, and the people think that they are doing right in not recognizing something that does exist and is liable at any moment to be inoculated into the system of an innocent baby boy or girl by the blindness of the sin, ignorance.

112 West Forty-fifth Street.

THE MALARIAL ORGANISM,

*WITH REPORT OF CASES.**

By WILLIAM B. FRENCH, M. D.,
WASHINGTON, D. C.

In asking your attention to a subject so familiar as malarial infection, it seems proper to state at the beginning of this paper my reasons for so doing.

In the first place, and most important, is the indisputable fact that we now have, thanks to Laveran, the means of making a positive and early diagnosis in nearly every instance. In the second place, that means is not ordinarily resorted to, with the result that in some instances, perhaps many, our patients are allowed to suffer unnecessarily. There is little excuse for most of us who neglect an opportunity to discover the truth when that opportunity is open to any one who has good eyes, a good microscope, and a little patience. Somebody has offered the suggestion that "it takes too much time to bother with a microscope, and, besides, anybody knows that if a man has a chill, fever, and sweat on alternate days he has malaria." The last statement is probably true enough, but the first is not. We know it is not unusual to consume two or three days, and I have seen good men occasionally spend twice that number, in making an uncertain diagnosis of malarial infection in patients who did not present typical symptoms. Now, how much more satisfactory it is to spend an hour, generally much less, to determine definitely what we have to deal with, or to exclude the disease in question, as the case may be. If the first examination of the blood is negative, a second should be made a few hours or a day later; even then this procedure is infinitely more conclusive than guessing, into which we are often enough forced, without adopting it uniformly because it is easier for us.

Explanation of the plate, showing some of the characteristic forms found in fresh blood in malarial infection.

Fig. 1. An early form of the tertian parasite.

Fig. 2. Half-grown tertian organism.

Fig. 3. Full-grown tertian organism.

Fig. 4. Segmenting form, common to the tertian, quartan, and æstivo-autumnal types of malarial infection.

Fig. 5. Flagellate body, also found in the three types mentioned.

Fig. 6. An early form of the æstivo-autumnal parasite.

Fig. 7. An ovoid body, found only in the æstivo-autumnal fever of a week's duration or more.

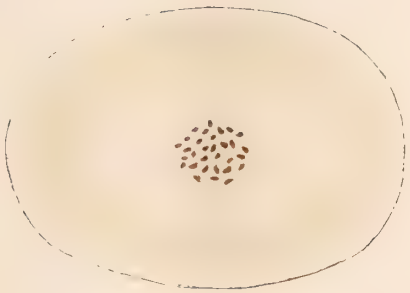
Fig. 8. A crescentic body, generally seen in the fresh blood without the so-called "bib" or remains of a red cell attached, and only found in the æstivo-autumnal fever.

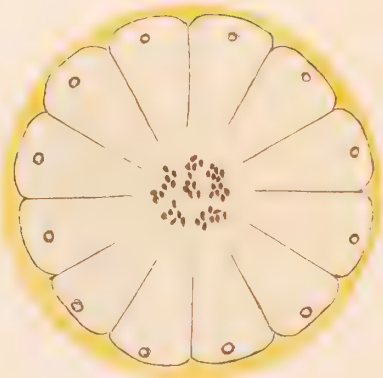
* Read before the Medical Society of the District of Columbia, January 15, 1896.

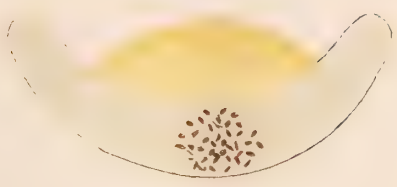
A word or two about those interesting-looking diagrams intended to represent some of the various forms in which the malarial organism appears when examined in fresh blood.

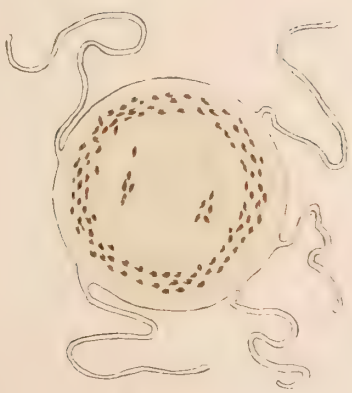
First, the tertian infection (diagrams Nos. 1, 2, and 3), most prevalent in the spring, summer, and early fall months, is found in its youngest visible form, the object shown in diagram No. 1—a red corpuscle having within itself a rather indefinite mass of protoplasm with active amœboid movements; sometimes looking as shown in the diagram, again changing to a star, cross, leaf, or other curious shape. A little later in its growth, fine granular, very actively moving pigment is seen; and still later it has grown to occupy half of the cell (diagram No. 2), the pigment granules are larger and more active, and the whole object is now much more distinct. The same organism is shown in its full development within a swollen red cell in diagram No. 3, which it has partly decolorized, and represents an average specimen. Some have more pigment, some less. This stage is reached about forty-eight hours after the first, and then the organism does one of several things: it may segment—that is, assume the form in diagram No. 4—and each of its twelve to twenty parts separate and infect new corpuscles, thus perpetuating the disease; or it may entirely decolorize the red cell and become an extracellular body, to be ingulfed by a leucocyte, or to break up into several smaller extracellular bodies by a process of budding, and disappear, leaving its pigment free in the plasma where the leucocytes absorb and show it, furnishing a point of diagnostic value when other forms are scarce. Forms 1, 2, and 3 are frequent in the circulating blood, the segmenting forms infrequent.

Still another change from its extracellular form is that to a flagellate body (diagram No. 5). The pigment becomes unusually active, arranges itself into a ring near the circumference, the rim of the body assumes at places a wavy, undulating motion, and suddenly there bursts from different points two to five or six flagella in the most frantic motion, thrashing about among the neighboring red cells and knocking them in all directions. Finally, at the end of half an hour or less, the flagella quiet down and remain motionless, or our friends the phagocytes may devour the body, flagella and all, in active motion; or a flagellum may detach itself and wander off alone, still retaining its









DR. FRENCH'S ARTICLE ON THE MALARIAL ORGANISM.

activity, to be finally lost. The significance of the flagellate body is not a settled point as yet. These are the principal forms seen in tertian infection, though, as stated, the last two are quite scarce in the capillary circulation and give us the familiar chill, fever, and sweat on alternate days if it is a single infection; daily, if the infection is with groups of organisms which mature twenty-four hours apart.

Another distinctive type of malarial poisoning—the æstivo-autumnal, the symptoms of which are known to most of us as "dumb chills"—is occasioned by the pres ence in the red cells of the organism shown in its youngest stage in diagram No. 6, which may closely resemble at this time the young tertian form, but a little later a careful examination of it will show some points of difference. It is smaller than the tertian, frequently assumes the ring-like form seen in diagram No. 6, and then changes rather abruptly to an irregular mass like diagram No. 1. This form in a variable time develops pigment granules, just as occurred in the young tertian, except that they are fewer in number, sometimes only two or three, and are not usually so active. It occupies only about a fourth of the corpuscle, never growing as large as the tertian. Segmentation occurs in this type of infection, though the segmenting forms are rarely if ever found in the capillary blood. Flagellate bodies are found as in tertian fever. The greater part of the development of this organism—æstivo-autumnal—probably occurs in the internal organs. The exact time required to reach its maturity is yet in doubt; probably it is anywhere from twenty-four to forty-eight hours, more or less, consequently the irregularity of the fever and other manifestations of its presence.

After this infection has lasted six to eight days there appear in the blood several forms totally unlike any found in the tertian—forms known as ovoids, round bodies, and crescents—two of which are shown in diagrams Nos. 7 and 8. These are usually extracellular, pigmented organisms, larger than a red cell, and probably a further development of certain of the organisms of this infection, which, instead of segmenting, assume the forms shown. Their presence indicates that the infection is a week old at least, and probably much more, and that it is the æstivo-autumnal form. Sometimes the crescents, as well as the ovoids and round bodies, have the remains of a red cell attached, shown here only in the crescent. The last-named form is very persistent, and remains in the blood frequently after other forms, and most if not all symptoms, have disappeared.

There is one other type to be referred to, and then, after reporting a case or two, I will not tax your patience further.

I refer to the quartan; but as I have had no personal experience with it, and in some six hundred malarial cases which were examined at the Johns Hopkins Hospital only five of this type were found, and in some three hundred and fifty or more examinations made at the Emergency Hospital in this city it has not been met with at all, a very brief reference will be made to it. In its earliest stage of development it resembles closely the tertian organism, being a small, hyaline amœboid body occupying but a small part of the red cell, having a sharper outline, a slower amœboid movement, with less range of motion. It develops pigment as did the other forms, but the granules are coarser, darker, and have very little motion. The red cell which it inhabits becomes shrunken and darker than normal, and sometimes has a greenish tinge. Their full development is reached at the end of about seventy-two hours, having gradually changed from something like the young tertian to the form resembling to some extent the full-grown tertian, retaining, however, the differences in quan tity, color, and movement of their pigment. At this point they may segment, may become extracellular bodies, and break up by fragmentation or budding, or they may become flagellate bodies. These various forms are smaller than the tertian, and may be studied in the circulating blood, where they seem to undergo their development. The diagrams before you, with such verbal changes as have been made, will, it is hoped, serve to illustrate the differences mentioned.

There are two or three cases to be reported, which emphasize the necessity of a resort to the microscope and the benefits which follow.

On October 17th last there was brought to the children's clinic, Emergency Hospital, service of Dr. Hawkes, a nursing white male child, four months and a half old. The child's mother—who, by the way, was only seventeen years and a half old—stated that her baby had been cross and fretful day and night for the last ten days; had lost weight; that it would not nurse, and seemed to be in pain. It had been in good health prior to the ten days mentioned, except an attack or two of summer trouble of which it was now well. For three days past it had lain quiet and apparently fast asleep, and could not be made to stay awake long enough to nurse. It had had cold hands and feet, and may have looked blue at times, but as the mother was of a class and age in life that does not observe very closely, the history was quite indefinite. The child now seemed to be comatose. Ordinary attempts to arouse it failed. Upon lifting the eyelids to examine its pupils, which were normal, it made no objection, nor did it when the corneæ were first touched; but after repeating the touching of the corneæ, shaking, and speaking loudly, it was finally aroused to a half-conscious, stupid state, which did not greatly help us in our diagnosis. Upon further questioning of the mother it was discovered that two weeks before this time she herself had had two or three shaking chills, but had recovered promptly. That statement led to an examination of the blood of the baby, in which were found numerous large tertian organisms represented in diagram No. 3. Had the case been that of an adult, the ordinary shaking chills, followed by fever and sweat on alternate days, would most likely have occurred, but the symptoms were modified, as they usually are, by the youth of the patient, and as symptoms generally are modified for the purpose of confusing the doctor.

Eight days later the baby was again presented, this time better in every way. Had laughed and played some during the intervals between visits, and was otherwise improved. Examination of the blood showed a very few large tertian forms, but in addition a number of ringlike and intracellular hyaline bodies (diagram No. 6), indicating an infection with the æstivo-autumnal forms in the presence of tertian organisms—in other words, a double infection. Quinine was continued, and three days later the baby again appeared, with

the tertian forms absent and only a few of the æstivo-autumnal forms left, and practically well on the road to recovery.

This case is interesting because of the extreme youth of the patient—four months and a half—because of the double infection which occurs in about two per cent. of cases only, and because of the satisfactory diagnosis and conclusion of the case. It seems very certain that a correct and immediate diagnosis would not have been made without an examination of the blood, nor would we, later in the sickness, have discovered the second infection before it had made serious mischief. The urgency of a prompt and certain diagnosis was very apparent—much more apparent than the little one's trouble—and we would have been morally responsible had we not made a correct diagnosis.

Most of us appreciate the sometimes embarrassing question of anxious parents, "What is the matter with baby?" and how our ingenuity and conscience are taxed by the reply we give. When we have a source of information that will so surely help us in the disease in question, why not turn to it?

There have occurred this summer and fall a number of cases of malarial infection in young children, under two years old, in the service of Dr. Hawkes, in which the symptoms were not so threatening as in the case cited, but in which a correct diagnosis might have been easily overlooked without an examination of the blood, and which, if they had been treated for a number of other troubles whose symptoms resemble those of malaria, would have been quite as serious finally

Through the courtesy of Dr. G. Byrd Harrison I am permitted to report from his service another case where the conditions were alarming.

In this instance a white man, aged twenty-one years, was brought to the hospital by the ambulance, August 14, 1895, at 2 P. M., in a comatose state. He was found where he fell on the street, unconscious; skin hot and dry; temperature, 105·4°; pulse, 110; and respiration, 24. Pupils were equal and reacted. No odor of alcohol or other drug. As the day was a hot one the diagnosis of heat stroke seemed very plausible, but at the suggestion of Dr. Smith, the resident physician, the blood was examined within two minutes, and showed an immense quantity of large tertian forms. The diagnosis of malarial coma was made, and a hypodermic injection of hydrochloride of quinine, fifteen grains, was given, together with thirty grains by the mouth. In two hours the temperature was 101·2°, and at midnight normal. The patient remained in the ward three days with no rise of temperature and was then discharged.

I believe this case to be the first reported instance of malarial coma from tertian infection. Additional cases could be cited where a positive and immediate conclusion was needed, but these two serve very well to emphasize the necessity of a blood examination when there is the least suspicion of malaria. When the organism is found we know at least one trouble with which we have to deal; there may be others, but it is probable there are not.

As to the best time to examine the blood: any time will generally result in finding the organism. There are times, however, when it is more plentiful in the general circulation than others, usually about the time of the paroxysm, but there is no occasion for delaying the examination; examine at once when the patient presents himself. If quinine in sufficient quantity to affect the system has been taken, then the search, unless for crescents and ovoids, will usually have to be longer, for the organisms will have been decreased in number, though a thorough search will generally discover them.

A one-twelfth-oil immersion lens is almost a necessity. The blood for the examination is collected from a very small drop, preferably from the lobe of the ear, as it is not very sensitive, by touching the top of the drop with a perfectly clean cover glass and laying it quickly upon a clean glass slide where it will spread in a thin layer. The glass must be clean, and only a small drop used—not larger than a pinhead—otherwise the layer of blood is apt to be too thick to examine satisfactorily. The margins of the cover slip may be sealed with vaseline or melted paraffin if it is desired to preserve the slides for several hours, as is often the case, and if carefully prepared will keep well for from four to six or eight hours, and sometimes much longer.

Examination of the fresh specimen seems more satisfactory and simpler than staining, and is all that is required for diagnosis.

506 East Capitol Street.

THEORY AND PRACTICE OF THE COUNTER-ENVIRONMENTAL TREATMENT OF PULMONARY TUBERCULOSIS.*

By W. J. McDOWELL, M. D.,
PRESIDENT OF THE BALTIMORE MEDICAL AND SURGICAL SOCIETY, 1878, ETC.

(*Concluded from page 647.*)

Treatment.—In considering the subject of the treatment of pulmonary phthisis I shall dwell only on those measures which are necessarily complemental to the theory of the ætiology and pathology of the disease as set forth in the preceding pages.

The subjects, general hygiene, climatic influence, diet, etc., as well as that of general, as distinguished from specific, therapy, while necessary integers of this and every system of rational treatment, are not in themselves strictly germane to the object of this paper, which is intended to elucidate a new theory of the pathogenesis of tuberculosis, and to formulate the principles and methods of treatment by which this theory has been practically and successfully applied. These principles, being fundamental ones, are applicable in all cases of phthisis, so that, in order most successfully to combat any form of the disease, it is necessary that they be kept constantly in view and the general plan of treatment adapted to them. Beyond this point each individual case must be treated in accordance with those well-recognized "general principles" which should ever govern in the treatment of this many-sided malady. The objective points of treatment may be formulated as follows:

1. Gradual destruction of the bacilli by the production

and maintenance of a counter-environment inconsistent with their continued existence.

2. Prevention and correction of sepsis and septic absorption both by counter-environmental influences and by strict attention to the recognized principles of antisepsis—atmospheric, respiratory, and gastro-intestinal.

3. The meeting of special morbid conditions in accordance with the well-recognized rules of modern therapeutics, with particular attention to the promotion of the digestive, excretory, and eliminative functions, and to tonic and restorative treatment.

4. After arrest of the tuberculous process, the adoption of measures of prophylaxis against reinfection.

5. The application of the same system of prophylaxis in cases where there exists a strong constitutional tendency to tuberculosis, but one which has remained undeveloped, thus securing to the individual immunity from the disease.

I do not wish to be understood as declaring that the bacilli can be speedily and summarily destroyed by any change in their environment that can be effected by therapeutic means, but that, under such unfavorable environment as can be so established, each successive generation of bacilli will become weaker and sparser than its predecessor, and correspondingly degraded in vitality and fertility until the point of quiescence is at last reached, the absence of favorable conditions precluding the possibility of further growth, and this state of quiescence will then continue to exist for an undetermined period after all active manifestations of germ life have ceased, when they will finally perish, unless in the meantime awakened to renewed activity by a revival of favorable environmental conditions.

In view of the fact that these micro-organisms multiply with such amazing rapidity, one generation following another in quick succession, it would still be possible, in the manner above indicated, to rather abruptly terminate their activity, could we, with the means at our command, establish promptly and perfectly, and maintain absolutely and continuously, the counter-environment which experience has shown to be fatal to them; but as these can only be met approximately, the desired end must be attained at the expense of more time. Nevertheless, germ activity can be inhibited to a certain extent in nearly every case from the very beginning of treatment, and, in the majority of instances, a practical cure will ultimately be accomplished. This statement, of course, does not apply to those very advanced cases in which vitality is about exhausted, the larger part of the lung substance practically destroyed, and the various vital organs of the body seriously crippled from tissue degeneration; but I am able to confidently assert, from an accumulated experience in over one hundred and twenty cases treated by this method, that even where the disease has advanced to the third stage, and well defined cavities are present, the condition is still a very hopeful one, provided the patient possesses good vitality and sufficient intelligence to enable him to properly carry out his physician's instructions.

In order to establish this counter-environment the objects to be aimed at are (*a*) to reduce the temperature, both general and local, to a point at or below 37° C. (98·6° F.), and to maintain it at this point day and night, as nearly as this may be practicable by all therapeutic means, until the tendency to pyrexia finally disappears; and (*b*) to subdue cellular hypertaxis, and so remove the common cause of local heat (which stimulates growth) and interstitial exudation (which supplies nutritive pabulum), by exhibiting such medicines as will act as cell obtundents.

Fortunately, we possess, in a single class of medicines agents which fulfill both these indications. I refer to certain of the antipyretics of the aromatic group, for, in addition to their power to reduce abnormal temperature, they have also a very positive analgetic effect, and the degree in which each of them possesses this latter property is the measure of its cell-obtundent power. This part of my subject I approach with no little hesitation, because I am well aware of the opinion of the profession concerning these agents, and of their being rejected, as a rule, in all conditions of disease in which the general circulation is enfeebled and the blood impoverished in its corpuscular elements. Having had, as I think I can safely assert, at least as wide a clinical experience in the use of this class of medicines as any of my contemporaries, I give it as my deliberate opinion that the suspicion with which they are regarded by the medical world is not justly merited, and grows largely out of a want of sufficient personal familiarity with their use in anything approaching physiological doses.

Of course, we occasionally encounter the physiological effect of the drug exhibited, but then we are always duly warned of its approach by beginning cyanosis and discoloration of the urine. This warning must always be heeded and the drug either withdrawn for a time or its dose reduced, just as we either withdraw or reduce the dose of the iodides or quinine when the physiological effect of either becomes manifest. There is nothing more to terrify in the one case than in the other, and, as a rule, the patient profits by the medication in every instance.

There is the one element of idiosyncrasy that must be considered, but it need not be feared if we are careful, when first prescribing, always to give the drug only in small doses until we shall have become acquainted with its peculiar constitutional effect in each given case, and then gradually increase the amount until we reach the maximum safe dose for the individual patient.

Very few useful drugs have ever been introduced that have not been made, in like manner, subjects of suspicion on account of reported accidents occurring in idiosyncratic cases. This has been particularly true of chloral, the general anæsthetics, and cocaine, but it is also true that these reported fatalities become, as a rule, fewer and fewer as the use of each drug becomes more extended and the laws governing its administration are better understood. Nor is the therapeutic value of the drug thereafter challenged, even if once in a long while an accident from its use is reported. This is as it should be, for we should ever be ready to avail ourselves of all the good effects of any medicine, using at the same time every care to avert the evil; for it would be just as illogical to omit to use a valuable drug because of the theoretical possibility of accident as it

would be to refuse a life preserver to a drowning man for fear of the theoretical possibility of hitting him on the head with it.

Not all of this class of antipyretics, however, can be used without injury, in full doses, over any considerable length of time. Acetanilide, for example, not only causes marked sedation of the circulation, but exerts also a powerfully destructive effect upon the morphological elements of the blood, converting the hæmoglobin of the blood into methæmoglobin and producing profound anæmia and icterus.

Antipyrine is a better and safer agent, for it is not so destructive to the corpuscular elements of the blood, and possesses the advantage of being a prompt and powerful antipyretic and analgetic; but as it also has a positive sedative action on the heart and circulation, its use would be more appropriate in the early stages of phthisis when the strength of the patient is still fairly well sustained. At the same time it is doubtful whether even in later cases it would have, when judiciously administered, as depressing an effect on the vital forces as the continuance of the fever and septic toxæmia would. Indeed, it may be used with safety in almost any case if given with due caution, and for a few days only; as in the event of the system of the patient seeming to acquire a tolerance of the other antipyretics which had been in use theretofore.

Phenocoll is one of the safest of this entire group of antipyretics, for it exerts little or no depressing effect on the circulation, and may be used for a considerable length of time without seeming to exercise any destructive action on the hæmoglobin of the blood, but I have not found it to possess as marked an analgetic or cell-obtundent property as either antipyrine or phenacetine, and therefore it does not fulfill both of the above-mentioned indications so well as either of the last-mentioned drugs. Nevertheless, its use is indicated whenever very high fever is present, for, as it is freely soluble, it is rapidly absorbed, and its effect is correspondingly more prompt than that of the insoluble phenacetine. Phenacetine is, however, the most valuable of all the agents of this class in the treatment of phthisis, for its antipyretic effect is both positive and prolonged, while its analgetic property, the measure of its cell-obtundent power, is greater than that of any of its congeners, with the possible exception of antipyrine. On the other hand, it does not unduly depress the circulation, and may be given regularly for many consecutive weeks without injuriously affecting the blood. Occasionally, however, we find specimens of phenacetine which have been adulterated with acetanilide, and when such impurity is present the physiological effect of the latter drug very soon becomes manifest. The cheat, however, can be readily detected both by the sense of taste and by the difference in solubility of the two drugs. Phenacetine, therefore, is the one agent of this class which I prescribe most constantly and continuously in tuberculosis, holding the others in reserve to meet occasional conditions. For instance, if the patient seems to be acquiring a tolerance of phenacetine, as manifested by an increased resisting power in the fever, I am in the habit of changing for a few days to antipyrine or phenocoll, or a mixture of both. Again, where a tendency to the full physiological effect of the drug becomes manifest, I either withdraw it entirely for a season or greatly reduce the dose, giving at the same time enough of phenocoll to maintain the condition of apyrexia.

It is of great clinical importance that the medicines be given in positive doses and sufficiently often, because the effect on germ life is much greater if the transition to the counter-environment is sudden, and the new condition of affairs so established maintained with the minimum of fluctuation, for if the opposite conditions obtain, *i. e.*, if the transition is only gradual and if undue fluctuation of temperature is afterward permitted, the bacilli, being stimulated to renewed activity by frequent accessions of fever, will be able to resist for an indefinite time. We should endeavor, by the use of every possible therapeutic expedient, to prevent fever as nearly and as absolutely as that end can be attained, rather than to wait until it becomes positively declared and then to battle it down. It is a good plan even to aim to secure and maintain actual subnormality of temperature; that of 36·5° C. (97·7° F.), or even a little lower, I have found to be both safe and practicable, for at the seat of tuberculous infection there is, on account of the inflammation present, always a local, in addition to the general, elevation of temperature, which will only fully yield after that of the general circulation has fallen below the normal point. Furthermore, the full doses required to accomplish this end also tend to more completely control cellular hypertaxis, which is in itself a great desideratum in combating the disease. Just at this point I may say, parenthetically, that I believe that much of the benefit that has been derived from creosote and iodoform in the treatment of phthisis is due to the property that both of these drugs possess in common, of controlling cellular hypertaxis. They, no doubt, also inhibit to some extent the activity of the bacteria of putrefaction, and thereby lessen the septic toxæmia, but it is reasonably certain that they can exert no bacillicide power.

In treating a case of consumption by the counter environmental method it is impossible to get the best results by following the old three-times-a-day method or anything resembling it. The antipyretic must be given promptly whenever its use is indicated, and only at such times.

My first prescription in every case is a clinical thermometer, and my first care is to thoroughly instruct my patient or his attendant in its use and management. I then direct that an accurate record be kept of the fluctuations of temperature every hour during the day and every two hours through the night. This I find perfectly practicable whenever the services of a night attendant can be secured, for the patient soon becomes accustomed to the periodical disturbance and learns to fall asleep again in a few moments. Indeed, in most cases the difficulty after a time is to keep him awake long enough to take and record the temperature and give the medicine when required. I then order powders of phenacetine, ten grains in each, directing, if fever exists, that one be given at once, and the dose repeated whenever the record is taken until the temperature falls to the normal or below it.

The medicine is then withdrawn, but the record con-

tinued, and just as soon as there is another rise impending—that is, whenever the mercury recrosses the "normal mark" and rises even half a degree—another powder is at once given. In the majority of cases ten-grain doses will prove to be insufficient, and they will have to be increased to fifteen or more.

In the earlier part of the treatment many doses may be required each day, but before long germ life becomes progressively less active, and very soon two or three doses a day are all that will be indicated. Later on one dose daily will suffice, after which two or three or more days may pass before the thermometric reading calls for more, and finally the pyrexia entirely ceases to declare itself, and the use of the antipyretic ceases with it. But whether the daily doses are many or few, they must always be regulated by the thermometer, and never be given at stated times or by guesswork.

As I have intimated above, it very seldom happens that any single one of the antipyretics can be used exclusively throughout the entire course of treatment in any given case. It will generally be found necessary to use two or more of them for the reasons already stated. When antipyrine is prescribed, it should be given in doses of from fifteen to twenty grains. If given in combination with phenocoll, ten grains of each drug will generally suffice.

The cell-obtundent effect of the antipyretics may be enhanced by suitable auxiliary medicines, such as iodoform or creosote. The latter agent, however, I do not often employ, on account of its chemical relationship to the antipyretics, which are also phenic acid derivatives, and which must of necessity be exhibited in relatively full doses in nearly all cases. Creosote, therefore, I generally omit in order to avoid the physiological effect of systemic saturation with medicines of this class.

Cold baths and the various methods and expedients of hydrotherapy for the reduction of temperature are all valuable adjuncts to treatment, but the scope of this paper will not permit of their discussion. At the present time suffice it to say that any and every approved means, first, to battle down the fever, and then, that which is of most supreme importance, to keep it down, should be employed; for in the presence of continued pyrexia every form of treatment of pulmonary tuberculosis must ever fail, but in its continued absence the unassisted forces of Nature can always successfully cope with her microphytic enemies.

At the risk of placing myself at variance with the accepted teachings of the day, I am constrained to deny the existence of any other form of apyretic phthisis than that which is at least latent, and even to go a step further and declare that if in any given case there has been absolutely no elevation of temperature above the normal for any considerable length of time, the case is then one of convalescing phthisis, with the element of phthisis, in the strict etymological sense of the term, for the time, at least, eliminated. I have seen many so-called apyretic cases of progressing phthisis, and in these I have generally found the temperature even to register subnormal; but the thermometer, used for a number of consecutive days after the method above described, has never yet failed to reveal an occasional rise to 38° C., or even higher. This febrile movement, it is true, may persist for a short time only, but still it is long enough to stimulate and strengthen microbic activity. These instances are most frequently met with in cases of chronic fibroid phthisis, but they are also encountered in the early stage of the disease, before softening has taken place in the tuberculous deposit, and consequently before sepsis with its associated fever has developed. My whole experience warrants me in formulating the rule—a rule to which I have yet to encounter a single exception—that favorable progress in the treatment of phthisis is always in direct ratio to the degree to which fever is successfully opposed, and that a practical cure can be confidently looked for in every uncomplicated case in which the fever can be finally overcome.

The problem of controlling septic absorption is as important and as difficult a one as that of managing the bacillus itself—important, because not only does sepsis exert a most powerfully depressing and exhausting effect on the vital forces, but also lights up a most obstinate form of fever, which in its turn stimulates the bacilli of tuberculosis and other forms of micro-organic life to renewed activity and malignancy—difficult, because, while sepsis may be retarded to a certain extent by means of antiseptic inhalations, such methods, from the very nature of things, can never yield perfectly satisfactory results, for so large a part of the secretions in which this so-called fermentative process is going on is remotely situated and inaccessible to any germicidal agents that can be administered by the respiratory tract. If this difficulty is to be overcome, it must be accomplished by judicious mingling of constitutional treatment with the local measures which experience has already approved as useful expedients.

Now, clinical observation of cases of consumption treated after the method described in this paper has convinced me that a more powerful, though indirect, antiseptic effect can be obtained by the methods used to establish the bacillary counter-environmental conditions than by any or all agents heretofore used to antagonize sepsis; for not only does the reduced temperature adversely affect development in most of the septic germs, and especially the pyogenic microbes, but the subsidence by the local irritation in obedience to the analgetic or cell-obtundent effect of the drugs exhibited checks the exudative process and correspondingly lessens the amount of the secretions in which the germs of sepsis may multiply and flourish. Now, if, in addition to this indirect antiseptic method, we also order inhalations of antiseptic vapors and nebulized solutions, there will be found but a relatively small proportion of cases in which sepsis can not be minimized or held in check, for by these means we bring to bear upon the condition measures both of prevention and correction.

It is, of course, also necessary to secure and maintain as nearly as practicable an aseptic atmosphere in both the living and sleeping rooms occupied by consumptive patients. To this end perfect cleanliness, thorough ventilation, and carefulness in the matter of disposing of the sputum are the most important means, but it is also advantageous to impregnate the atmosphere of the room once or

twice daily with some volatile antiseptic. Many different agents of varying degrees of merit are recommended for this purpose, but I shall omit particular reference to them in this paper because they have been fully described elsewhere and often.

For the same reason I shall merely call attention to the importance of gastro-intestinal antisepsis in all cases of phthisis, and especially in advanced cases in which expectoration is profuse, for with such there is always a large amount of secretions involuntarily and unconsciously swallowed, especially during sleep, and if this fact is ignored the patient will not only suffer from functional gastro-intestinal disturbance and constitutional septic poisoning, but he runs the risk also of tuberculous self-infection of the viscera, hepatic abscess, and other organic complications. When, therefore, the secretions are profuse and purulent, I am in the habit of directing that the stomach be washed out every morning, and the washing followed by the exhibition of some safe and efficient antiseptic. Later, when the secretions diminish in amount and become muco-purulent in character, and especially if the symptoms of gastric disorder disappear, washing the stomach is dispensed with, but the use of the antiseptic continued until convalescence is established.

If my first prescription in every case of phthisis is a clinical thermometer, so it is also my last. It is my invariable custom with all my patients who have recovered from pulmonary consumption and in whom the disease has been arrested, to impress upon their minds, after all medication has ceased, the importance of using a thermometer several times daily for at least a year, and, in the event of fever from any cause, of reporting to me at once. The necessity of this precaution is obvious when we reflect that many of the germs of tuberculosis continue to live, though in a quiescent state, for an undetermined period after all manifestations of their presence have ceased, and that as long as this condition obtains, fever of any kind, if not promptly checked, could easily awaken them to renewed activity; whereas, if fever be kept down continuously, they will remain weak and impotent, and the germ destroying forces of the body will ultimately destroy them.

In this connection I would call attention to the fact that if patients can be protected against the recurring of tuberculous disease by simply guarding them against the accession of fever arising from any cause, and my experience warrants me in affirming that they can be so protected, then it follows as a logical necessity that individuals who have a "tendency" to tuberculosis, but in whom the disease has not yet declared itself, may in like manner and by the same means be effectually protected against its onset.

1331 Mosher Street.

Note.—The foregoing paper was prepared and read before the Baltimore Medical and Surgical Society, nearly three years ago. It embodies the results of four years of careful study and painstaking clinical observation and investigation of the principles which it sets forth and defends. Its publication, however, has been delayed until the present time, for I have felt that no new medical teaching should be uttered or promulgated under the spur of personal enthusiasm. I have preferred to wait, and in the mean time to submit the theories above set forth to every possible test, especially to that severest of all tests, prolonged clinical experience. And now, after applying this latter continuously for nearly seven years, I offer the results of my thought and observation to the profession with the confidence of assurance. Time has only served to strengthen my convictions, so that, were I to rewrite the paper to-day, there is no essential point in it that I should materially alter, and perhaps the only change I should make would be to recommend the use of additional methods of systemic refrigeration (hydrotherapy, etc.) in order to reduce the necessity of drug exhibition to its minimum.

April 28, 1896.

THE RELATION OF PAROTIDITIS TO ORCHITIS.

By EMIL ARONSON, M. D.,
Dallas, Texas.

During the winter of 1895–'96 we had an epidemic of parotiditis in the city of Dallas, Tex. An investigation of several cases coming under my treatment showed, as in other diseases, that the public school was the focus of infection.

On March 15, 1896, I was called to see the daughter of Mr. K. The family, consisting of six persons, lives in a small cottage containing only a few rooms. A daughter, nine years old, was taken sick with swelling of the parotid gland, fever, pain, etc., but she recovered in a few days under a treatment which was indicated by the most prominent symptoms. Calling on the 20th of March, I found the sixteen-year-old daughter of the family suffering with a severe inflammation of the parotid. Her sickness also took a normal course. On the 23d I was called to see a son of the family, and found him in bed, with temperature of 104°, and the pulse 100. He complained of pains in his testicles. On examination of the parts, I found both testicles swollen and painful, the left one being considerably larger than the right one. Close questioning of the patient did not reveal injury as the cause of the orchitis. Medical literature frequently shows in cases of parotiditis a complication of the genital organs in *the same* person, but in this case we have an orchitis in *one* person, while the other persons in the same house are suffering with parotiditis, and I am inclined to believe that the affection of the two different glands in different persons was due to the *same* infectious elements. It was impossible for me to make a microscopical examination of the blood in order to find the *Bacillus parotiditidis* discovered by Bordas. Owing to the lack of a large medical library in this city, I can not do more than relate this case. Finally, I should like to add that during this epidemic of parotiditis I observed two cases in which not the parotid, but the submaxillary gland only, was swollen.

The Buffalo Academy of Medicine.—At the last regular meeting of the Section in Pathology, on Tuesday, the 19th inst., the order for the evening included two papers entitled The Skull and Brain of Degenerates, by Dr. William C. Krauss, and The Clinical Examination of Fæces, by Dr. Julius Ullman; the exhibition of a case of tinea favosa, by Dr. G. W. Wende, and of pathological specimens by Dr. Matzinger, Dr. Smith, and Dr. Williams.

A Graceful Act, if report speaks the truth, was lately performed by the Pennsylvania Railway Company in furnishing a New York surgeon with a special train to transport him to Princeton, where he was to perform an urgently needed operation on one of the students.

THE

NEW YORK MEDICAL JOURNAL,

A Weekly Review of Medicine.

Published by D. APPLETON & Co.

Edited by FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, MAY 23, 1896.

A GREAT INSURANCE COMPANY'S EXPERIENCE IN MORTALITY FROM CASUALTIES.

STATISTICAL statements and the comments that accompany them are not usually accounted among the most attractive publications, but we venture to say that a report on *Mortality from Casualties* made to the president of the Mutual Life Insurance Company of New York by the company's medical director, Dr. Elias J. Marsh, is among the most interesting of chapters of accidents. The report is dated April 12, 1894, but its publication is quite recent. It gives the company's experience for the ten years 1884 to 1893 inclusive. During that period there were seven hundred and fifty-nine deaths as the result of casualties among the company's policy-holders. Dr. Marsh classifies the casualties under eleven headings, the first of which is railroad accidents, including all fatal casualties resulting from the operation of steam, cable, electric, and horse railroads. They numbered a hundred and twenty, and in thirteen of them railroad employees were the victims. Very few of these thirteen persons had been accepted for insurance while known to be engaged in the railroad business, and the inference is that they either made incorrect statements in their applications or engaged in that business after receiving their policies. The large number of accidents and the very short duration of the insurance, says Dr. Marsh, show plainly the excessive hazard incurred in connection with all railroad work, not sufficient perhaps to utterly disqualify railroad employees for insurance, but enough to indicate the need of extreme care in selecting risks and probably the necessity of exacting an additional premium.

A hundred and nineteen persons were killed by falling or by being struck by falling bodies. A hundred and eighteen were drowned. In connection with the mortality by drowning, Dr. Marsh remarks that it is interesting to compare it with that of the company's earlier experience. In a former period ending in 1873—the text says: "For year ending 1873," but that we take to be a clerical error—with half the deaths from casualties and one third of the total mortality there were twenty-six deaths among passengers on ocean, lake, and river craft, but during the ten years covered by this report, with a far greater number of lives at risk, there was not a single death of a passenger on an ocean steamer. This is, indeed, a gratifying sign of the increased safety of marine travel.

Eighty-four persons died of injuries received by being run over or struck by runaway horses or heavy trucks, or by being thrown from vehicles, or by being kicked by horses. There were seventy-six homicidal deaths, including a few in which suicide was suspected. Geographically, they were distributed as follows: Three in the State of New York, one in Virginia, one in West Virginia, four in South Carolina, five in Georgia, four in Alabama, three in Mississippi, four in Louisiana, six in Texas, six in Arkansas, four in Missouri, one in Tennessee, three in Ohio, two in Illinois, two in Michigan, one in Wisconsin, one in Minnesota, three in Kansas, two in Nebraska, two in the Indian Territory, three in New Mexico and Arizona, four in California, one in Washington, seven in Mexico and Yucatan, one in southern Africa, and two in Italy. It is to be regretted that Dr. Marsh has to record an enormous increase of the number of homicides since the report of 1873; in the period dealt with in that report the proportion of homicides to the whole number of deaths by violence was five per cent., but it is now ten per cent.

Seventy-two deaths resulted from the careless use of firearms. In many of the cases of death from pistolshot there is no positive knowledge of the manner of the discharge, as the victims were alone at the time; in several there was reason to suspect suicide, and in at least ten it was very probable. There is no way of avoiding this amount of danger from accidental shooting, says Dr. Marsh, so long as the custom of keeping and using firearms is as general as it is now in the United States.

Forty-eight deaths were attributed to poisoning—with opium in thirty-four cases, with chloral in five, with arsenic in two, with carbolic acid in three, with corrosive sublimate in one, with aconite in two, with hydrochloric acid in one, with cannabis indica in one, with cocaine in one, with atropine in one, and with strychnine in one. In twenty-two of the opium and four of the chloral cases the drug was self-administered, without medical advice, but in only very few was there a reasonable suspicion of suicidal intention. In both of the arsenic cases murder seems to have been done. In all the carbolic-acid, corrosive-sublimate, aconite, and hydrochloric-acid cases the poison was taken by mistake. In the cannabis-indica case, which, by the way, must be a well-nigh if not quite unique instance of fatal poisoning with that drug, the victim was in the habit of taking it for cough, and took an overdose. The victim of cocaine had used the drug habitually, and took an overdose. The atropine poisoning took place in consequence of an apothecary's error. In regard to the strychnine case, the information is defective.

Solar heat caused twenty-five deaths; exposure to cold three; lightning, three; tornadoes, three; and the Charleston earthquake, one. Burns, scalds, explosions, and various casualties incident to conflagrations resulted in thirty-one deaths. The fatal injuries received from machinery, tools, and elevators were twenty-five in number. Finally, a list of "unclassified" casualties includes eleven deaths from gas asphyxia, three from goring by bulls and cows, and one each from an explosion of dynamite, from the explosion of a steam boiler, from being crushed between a wharf and a ferryboat,

from being struck in the eye with a pitchfork, from an accident in lumbering, from swallowing false teeth, from being thrown from a sled, and from being thrown from a bicycle.

As regards the vocations of the victims, the largest number of deaths occurred among farmers, but this preponderance, says Dr. Marsh, is due to the large number of farmers insured, and not to any excessive hazard in farming. "The dangers are real," Dr. Marsh remarks, "but the risk is fully equalized by the general healthfulness of the occupation." Railroading and seafaring, both hazardous occupations, occasioned a considerable portion of the mortality. Dr. Marsh considers it satisfactory, however, to find that there were no deaths among conductors, section masters, and yard masters, whom the company is in the habit of insuring at ordinary rates. Three masters of coasting vessels were lost. This, says Dr. Marsh, appears to be a large number, but he thinks that perhaps it is provided for by the increased premiums usually required on risks of that class. Thirteen deaths occurred among persons engaged in the building trades. This large number, says Dr. Marsh, undoubtedly represents very considerable hazard in the occupation, but this form of work is engaged in for only a portion of the time, the intervals being taken up with shop work. It is also probable, he thinks, that these dangers are compensated for by the wholesome outdoor life of builders. Sixteen deaths occurred to artisans, millers, and other persons engaged about machinery. Four of these accidents happened from cotton-gins, and three from circular saws. In the majority of both these classes the injuries occurred to persons who were only occasionally engaged at the work, and therefore ignorant or careless of the dangers. The nine other cases occurred in various ways, and represent the unavoidable hazards attending employment in factories and machine shops.

Dr. Marsh concludes his report with the following reflection: "New inventions and appliances bring new forms of danger, and this danger is proportionate to the novelty. Custom, self-interest, and appropriate legislation, however, soon interpose reasonable safeguards and reduce the danger to a minimum."

THE LEMON AS A PESSARY.

At a recent meeting of the Lyons Society of the Medical Sciences, as we learn from *Lyon médical* for March 29th, a hospital interne, M. Bérard, showed a lemon, one of a number which a woman sixty-eight years old had carried in her vagina by turn for twenty-two years, on account of prolapse of the uterus with cystocele and proctocele. This particular lemon was medium-sized and had been worn for about six weeks. Ordinarily, according to the woman's story, she had been able to remove her lemon easily, and had done so about once a month, but on this occasion she had asked to have it removed. It was extracted without much difficulty by means of a Museux's forceps and, to the patient's unconcealed displeasure, replaced with an appliance more familiar in gynæcological practice. The lemon seemed to be unchanged; it gave out no unpleasant odor and presented no trace of putrefaction.

The uterine prolapse had come on after the menopause, but its primary cause had been, according to M. Bérard, a rupture of the perinæum incurred in the course of one of the woman's five confinements and left unrepaired. She had at first worn a Dumontpallier pessary, but it had proved uncomfortable, and, acting on the advice of another woman, she had substituted the lemon for it. She declared that a lemon had always answered the purpose; that it was easy of introduction, that it readily kept its place, and that she could remove it without much trouble. In one instance, however, she had been obliged to wear one lemon for a year continuously, because it was too large for her to remove, but at the end of that time it had escaped of itself, sodden, to be sure, but without having given rise to any eschar or any infection, whether of the vaginal wall or of the cervix uteri.

At the examination, the mucous membrane of the vagina and the cervix had been found rosy, sound, and free from excoriation, so that it might be questioned if this pessary had not been really antiseptic, and if it had not some advantages in cases of prolapse coming on after the menopause, when there was no longer any need of taking the menstrual flow into consideration. It was questionable, too, M. Bérard thought, if much more costly pessaries would have been so well borne for so long a period by a woman who paid no attention to hygiene and had to work all the time.

The use of the lemon within the genital canal is not wholly novel; even the apple has been used as a pessary, as in an instance that M. Bérard cites from a *Treatise on Hernia*, by A. Verdier, published in 1840. So protracted an employment of lemons for a mechanical purpose, however, must have been rare, if, indeed, it has ever occurred at all; *a fortiori* may this be said of so prolonged a sojourn of a single lemon in the vagina as that of which M. Bérard spoke.

MINOR PARAGRAPHS.

GL'INCURABILI.

This is the title of a new semi-monthly Italian journal of clinical medicine and therapeutics founded and directed by Professor Giuseppe Ria, of the Ospedale incurabili in Naples, and edited by Professor Francesco Brancaccio and Professor Giuseppe Caccioppoli, of the same institution. Whether or not the hospital restricts its benefactions to the incurable, the journal does not so limit its scope, but deals with the whole range of practical medicine and surgery. The new journal was started last January. Judging from the numbers that have thus far reached us, we must say that it is a useful publication, and we wish it a successful career.

THE METHODIST EPISCOPAL HOSPITAL IN BROOKLYN.

The eighth annual report of this young institution—incorporated only fifteen years ago and not actually opened until the close of the year 1887—shows that it is doing a great amount of work, and very good work at that. In particular, we would call attention to the excellent report of the first

surgical division, by Dr. Lewis S. Pilcher, surgeon in charge, and Dr. James P. Warbasse, assistant surgeon, which fills a hundred and thirty-eight of the two hundred and fifty pages that make up the volume. The report covers the period from November 1, 1894, to October 31, 1895.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending May 19, 1896:

DISEASES.	Week ending May 12.		Week ending May 19.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus	0	0	0	0
Typhoid fever	7	0	6	0
Scarlet fever	96	12	75	4
Cerebro-spinal meningitis	4	3	3	2
Measles	397	16	280	18
Diphtheria	256	37	240	24
Tuberculosis	176	123	242	146
Small-pox	1	1	0	0

The Indiana State Medical Society.—The forty-seventh annual meeting will be held in Fort Wayne, on May 28th and 29th, under the presidency of Dr. Miles F. Porter, of Fort Wayne. The following papers are included in the programme: Placenta Prævia, by Dr. H. Smith, of Vincennes; The Surgical Treatment of Abortion, by Dr. W. H. Link, of Petersburg; The Vaginal Douche in Obstetrics, by Dr. G. B. Stemen, of Fort Wayne; The Future of Obstetrics, by Dr. Mary A. Whery, of Fort Wayne; Hydrocele and Varicocele, by Dr. J. Link, of Terre Haute; The Abuse of Water in Surgery, by Dr. Edwin Walker, of Evansville; The Ætiology of Diseases Peculiar to Women, by Dr. Martha J. Smith, of Indianapolis; Cranial and Intracranial Injuries, by Dr. W. H. Myers, of Fort Wayne; Diffuse Pelvic Inflammation, by Dr. L. H. Dunning, of Indianapolis; Perinæorrhaphy and Perinæoplasty, by Dr. Herman A. Duemling; A Plea for Preliminary Iridectomy in Cataract Extraction, by Dr. David W. Stevenson, of Richmond; An Epidemic of Trachoma, by Dr. George F. Keiper, of Lafayette; Black Cataract, with a Report of a Case, by Dr. J. O. Stillson, of Indianapolis; Intubation, by Dr. J. W. Brunker, of Riley; The Medical Act of Indiana, by Dr. William P. Whery, of Fort Wayne; The president's address, by Dr. Miles F. Porter, of Fort Wayne; an address in bacteriology, by Dr. Theodore Potter, of Indianapolis; an address in medicine, by Dr. B. Van Sweringen, of Fort Wayne; an address in surgery, by Dr. Frederick J. Hodges, of Anderson; The Common Use of Glasses, by Dr. F. C. Heath, of Indianapolis; The Auto-activities of the Human Body, by Dr. James F. Hibberd, of Richmond; Cerebral Arteriosclerosis and Apoplexy, by Dr. A. E. Sterne, of Indianapolis; The Diagnosis and Treatment of Meningeal Hæmorrhage, by Dr. G. W. McCaskey, of Fort Wayne; Human Physiology in its Relation to Biology, by Dr. Guido Bell, of Indianapolis; Epilepsy—its Causes, Pathology, and Treatment, by Dr. Delia E. Howe, of Fort Wayne; Intracranial Lesions with Paralysis of Several Cranial Nerves, by Dr. J. L. Masters, of Indianapolis; Modern Views on Matrimonial Sterility, by Dr. H. O. Pantzer, of Indianapolis; Modern Problems concerning Tuberculosis, by Dr. Theodore Potter, of Indianapolis; Some Sanitary Questions concerning Tuberculosis, by Dr. Frank B. Wynn, of Indianapolis; Is Consumption ever Curable? by Dr. John B. Fattic, of Anderson; Oscillations in and Evolutions of the Present Treatment of Typhoid Fever, by Dr. O. A. Rea, of Marmont; The Therapeutics of Typhoid Fever, by Dr. J. A. Goldsberry, of Bloomingdale; Diphtheria and Membranous Croup—a Collective Report of a Hundred and Thirty-two Cases, by Dr. E. L. Larkins, of Terre Haute; The Diagnosis of Cancer of the Stomach, by Dr. N. J. Kishcart, of Columbia City; Diabetes Mellitus—its Modern Treatment, by Dr. Carl Proegler, of Fort Wayne; Oxygen Inhalations in Pneumonia, by Dr. W. Schell, of Terre Haute; The Management of Purpura Hæmorrhagica, by Dr. G. B. M. Bower, of Fort Wayne; The Practice of Medicine in the Light of Bacteriology, by Dr. H. C. Hume, of Terre Haute; Some of Our New Therapeutic Resources, by Dr. S. H. Havice, of Fort Wayne; The Relations of Pathogenesis, Morbid Anatomy, and Diathesis, by Dr. H. H. Weer, of Bluffton; and The Drawbacks to the Financial Success of the General Practitioner, by Dr. T. F. Leech, of Crawfordsville.

Balsam of Peru in the Treatment of Scabies.—Dr. S. E. Campbell, of Saginaw, Michigan, writes to us to say that he also has used Peruvian balsam in the treatment of the itch for a number of years, and refers to mention made of this use of the remedy by Waring, in his *Therapeutics*, who attributed it to Monti, of Vienna. Dr. Campbell's communication was called forth by an abstract from a French journal published in our issue for May 2d, setting forth the results of an extensive employment of the balsam in the treatment of scabies.

A Correction.—Dr. D. E. Keefe, of Springfield, Massachusetts, writes to us that in our issue for May 16th, in an abstract of an article on Dental Therapeutics, published in the *International Dental Journal*, reference is erroneously made to "Dr. Keep, of Springfield." Dr. Keefe implies that he is the writer to whom the reference was really intended to be made, inasmuch as he published the article referred to in the *Boston Medical and Surgical Journal*.

Physicians' Summer Addresses.—Dr. Joseph Baum (New York), the Sanitarium for Hebrew Children, Rockaway Park, Oceanus P. O., N. Y.

Change of Address.—Dr. J. E. Sheppard, to No. 135 Clinton Street, Brooklyn.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from May 2 to May 16, 1896:*

Caldwell, Daniel G., Major and Surgeon, having been incapacitated for active service by reason of his disability incident to the service, is retired from active service this date, May 2, 1896, by direction of the President.

Woodruff, Charles E., Captain and Assistant Surgeon, is detailed for temporary duty as attending surgeon in Chicago, retaining his station at Fort Sheridan.

Kennedy, James M., First Lieutenant and Assistant Surgeon, is ordered to Fort Yellowstone, Wyoming, for temporary duty with troops in the field, in the National Park, during the season.

Penley, H. O., Major and Surgeon, is granted three months' leave of absence, to take effect about July 1st.

Promotions.

To be Assistant Surgeons, with the rank of Captain, May 4, 1896, after five years' service: Ireland, Merritte W., First Lieutenant and Assistant Surgeon; Lippitt, William F., Jr., First Lieutenant and Assistant Surgeon; and Wells, George M., First Lieutenant and Assistant Surgeon.

Society Meetings for the Coming Week:

Monday, *May 25th:* American Pædiatric Society (first day—Montreal); Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore Medical Association.

Tuesday, *May 26th:* American Gynæcological Society (first day—New York); American Pædiatric Society (second day); New York State Medical Association, Fifth District Branch (annual—Brooklyn); New York Dermatological Society (private); Metropolitan Medical Society, New York (private); Buffalo Academy of Medicine (Section in Obstetrics and Gynæcology); Richmond, Va., Academy of Medicine and Surgery.

Wednesday, *May 27th:* American Surgical Association (first day—Detroit); Connecticut Medical Society (first day—New Haven); Ohio State Medical Society (first day—Columbus); American Gynæcological Society (second day); American Pædiatric Society (third day); New York Academy of Medicine (Section in Laryngology and Rhinology); New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Medical Society of the County of Albany, New York; Philadelphia County Medical Society.

Thursday, *May 28th:* American Surgical Association (second day); Connecticut Medical Society (second day); Ohio State Medical Society (second day); American Gynæcological Society (third day); New York Academy of Medicine (Section in Obstetrics and Gynæcology); New York Orthopædic Society; Roxbury, Mass., Society for Medical Improvement (private); Pathological Society of Philadelphia.

Friday, *May 29th:* American Surgical Association (third day); Ohio State Medical Society (third day); St. Louis Academy of Medical and Surgical Sciences.

Saturday, *May 30th:* St. Louis Medical Society.

Births, Marriages, and Deaths.

Married.

Cole—Baines.—In Buffalo, on Friday, May 15th, Dr. Frederick Turner Cole, of Wellsville, New York, and Miss Emma C. Baines.

Gibb—Stearns.—In New York, on Thursday, May 14th, Dr. William Travis Gibb and Miss Alice Elizabeth Stearns.

Hesser—Moore.—In Sacramento, on Wednesday, April 29th, Dr. George T. Hesser and Miss Minnie G. Moore.

Oliver—Tefft.—In New Rochelle, New York, on Tuesday, May 12th, Mr. William R. Oliver and Miss Dorothy O. Tefft, daughter of Dr. Edwin B. Tefft.

Died.

Forster.—In New York, on Friday, May 15th, Dr. Edward J. Forster, of Boston, aged fifty years.

Johnson.—In Salem, Massachusetts, on Tuesday, May 12th, Dr. Amos Howe Johnson, in the sixty-fifth year of his age.

Szabary.—In New Orleans, on Saturday, May 16th, Matilda Edwina, infant daughter of Dr. Latzi Szabary.

Twombly.—In Boston, on Wednesday, May 13th, Mary E., infant daughter of Dr. Edward L. Twombly.

Book Notices.

An Inquiry into the Difficulties encountered in the Reduction of Dislocations of the Hip. By Oscar H. Allis, M. D., Fellow of the Royal College of Physicians, and of the Academy of Surgery, Philadelphia, etc. The Samuel D. Gross Prize Essay. Philadelphia, 1896. Pp. xv–3 to 171. Diets for Infants and Children in Health and in Disease. By Louis Starr, M. D. Philadelphia: W. B. Saunders, 1896. [Price, $1.25.]

For this little book was awarded the Samuel D. Gross prize for 1895, and it is well worthy the distinction shown it. The author has made a careful anatomical and clinical study of the subject, and brings to light several new and interesting points. He not only establishes Bigelow's doctrine of the Y-ligament, but proves by dissection that the anterior and posterior ligaments of the joint are both arranged in this shape, and for well-defined mechanical reasons. He also shows that the fascia lata has much to do with holding the head of the femur in place, and may become a very influential agent in preventing the reduction of dislocation. The dangers of injury to the sciatic nerve and the possibility of its becoming caught over the head of the bone in reduction are well shown by dissections and diagrammatic drawings.

A new point of diagnosis in fracture and dorsal dislocation is said by the author to be a lack of tension in the hamstring muscles when the thigh is flexed upon the abdomen with the leg extended. He maintains that the so-called cases of subluxation of the hip are instances of dislocations reduced and the capsule carried into the socket with the head of the bone.

The thoroughness with which the subject has been handled can only be appreciated on a perusal of the work. It is profusely illustrated and well got up, and will be read with much interest by all who have had any extended experience with this difficult dislocation.

Clinical Lectures on Abdominal Surgery and Other Subjects. By Charles T. Parkes, A. M., M. D., late Professor of Surgery, Rush Medical College, Chicago, etc. Edited by Dr. A. J. Ochsner. Chicago: The W. T. Keener Company, 1896. Pp. 477. [Price, $4.]

Clinical lectures, as a rule, do not form a very solid foundation upon which to build a book. They generally lack thoroughness, and the speaker is prone to enlarge upon some salient feature of the case in which he and his audience are particularly interested, to the neglect of others quite as important in a careful study of the subject.

The present work, however, it must be acknowledged, is a marked exception to this rule. Either the author prepared these lectures carefully beforehand, or he was one of the most consecutive and logical clinical lecturers we have ever known. The book is written in colloquial style, and yet the English is so good, and one subject leads so naturally to another, that we are led on from page to page as in a novel. And in this interesting style he teaches us in a scientific way the art of abdominal surgery. He strikes the keynote of asepsis when he says that only he who is convinced in his own mind of the influences of infection and the many methods of its introduction can do aseptic surgery.

The most interesting chapter in the book is that upon gunshot wounds of the abdomen. We have read nothing more thorough or instructive upon this subject. The author's ingenious method of preserving the circulation to the

gut in resections, by stripping off the mucous membrane opposite the mesentery, seems to us to be a very important advance in the operation, provided it does not require too much time and manipulation of the parts. We might mention many other interesting points brought out by the writer, but only one is necessary to show that he is abreast with the times. He declared two years ago his skepticism with regard to sterilizing catgut, and so early adopted the use of silk for sutures and all such purposes in the abdomen.

It is unnecessary after this to say that we are much pleased with this book. It is handsomely made up and will be found interesting, not only to the friends and pupils of the late author, but also to the profession at large.

Diagnosis and Treatment of Diseases of the Rectum, Anus, and Contiguous Textures. Designed for Practitioners and Students. By S. G. Gant, M. D., Professor of Diseases of the Rectum and Anus, University and Woman's Medical Colleges, etc. With Two Chapters on Cancer and Colotomy by Herbert William Allingham, F. R. C. S. Eng., Surgeon to the Great Northern Hospital, etc. Illustrated with Sixteen Full-page Chromo-lithographic Plates and a Hundred and Fifteen Wood Engravings in the Text. Philadelphia: The F. A. Davis Company, 1896. Pp. xiii–399. [Price, $3.50.]

This work is the most complete that has been issued upon this subject since the publication of Mathews's book. The author has not attempted to write a history of the subject, but to give a practical *résumé* of the latest teachings upon the pathology, symptoms, and treatment of the diseases of the lower end of the intestinal tract. He has gone over all the important affections of these organs in a bright and interesting manner, and, though he has developed no startling, new, or original methods or theories, he has given a just and fair consideration to all the doctrines and practices in the modern science of proctology. We are pleased to see that he has taken no rash and radical stand for one treatment alone in hæmorrhoids, but finds fields of usefulness for them all. In the case of the injection treatment, in which he has met with such unfortunate results, he frankly admits that the cause was probably in his own faulty asepsis.

The prejudices of English surgeons against the Kraske method and its modifications yields not to experience or statistics, and Mr. Allingham still persists in advising colotomy in almost every case of cancer, and in consigning the patients to suffering and death, instead of giving them the one chance which surgery holds out to them in complete removal of the neoplasm. There is no objection to his holding these views, but in a treatise on rectal diseases such important procedures should not be passed over with a short and imperfect description.

The closing chapter, upon railroading as an ætiological factor in rectal diseases, is original and very interesting. The plates and cuts in the work are largely original and well executed. The make-up of the book is creditable to the publishers, and the authors may feel well satisfied with their work.

A Handbook on Leprosy. By S. P. Impey, M. D., M. C., Late Chief and Medical Superintendent, Robben Island Leper and Lunatic Asylums, Cape Colony, Africa. Philadelphia: P. Blakiston, Son, & Co., 1896. Pp. xv–116. [Price, $3.50.]

As chief and medical superintendent of the Robben Island Infirmary in Cape Colony, South Africa Dr. Impey has had unusual opportunities of studying leprosy in this, one of the largest leper settlements in the world, and from the abundant material at hand he has been able to secure a series of photographs of leper patients in all stages of the disease. In the thirty-seven illustrations which constitute the major portion of the volume and form its chief feature the disease is shown in all its forms and stages, and, as the handbook does not purport to be anything but a practical aid from a clinical standpoint, these illustrations serve every purpose. Each one has a short history of the cases presented, noting the chief points to be considered, and in this way more is achieved than by pages of unillustrated description. The writer adds a fourth form—syphilitic leprosy—to the three forms of leprosy ordinarily accepted. While admitting that this form is not generally recognized by the profession, he thinks that, if it were, the descriptions of the disease given by most writers would not be so conflicting and misleading.

In the chapter on symptoms no mention is made of the usual immunity of the hair of the head. As the destruction of hair takes place only by the direct action of the evolution of leprous growths in the skin, and as these are extraordinarily rare in the scalp, there is really no such thing as leprous alopecia, properly so called (Besnier). The peculiar sweetish, dead odor referred to as given off from the fœtid discharge from mucous ulcers is most characteristic and not generally mentioned. On the whole, the little volume will be found, and what it is very modestly said to be, a practical aid to those in want of assistance.

BOOKS, ETC., RECEIVED.

The Stomach: Its Disorders, and how to Cure them. By J. H. Kellogg, M. D., President of the Medical Missionary College, Chicago. Illustrated. Battle Creek, Michigan, Chicago, New York, and London: Modern Medicine Publishing Company, 1896. Pp. 3–368.

On Germinal Selection as a Source of Definite Variation. By August Weismann. Chicago: The Open Court Publishing Company, 1896. Pp. xii–61. [The Religion of Science Library.]

The Newer Remedies. A Reference Manual for Physicians, Pharmacists, and Students. By Virgil Coblentz, A. M., Ph. D., F. C. S., Professor of Pharmacy and Pharmaceutical Chemistry in the New York College of Pharmacy, etc. Second Edition, revised and enlarged. New York: D. O. Haynes & Co., 1896. Pp. 82.

Handbuch der Militärkrankheiten. Aeussere (chirurgische) Krankheiten. Von Dr. Fr. A. Düms, Oberstabsarzt in Leipzig. Mit 41 Textabbildungen. Leipzig: Eduard Besold, 1896. Pp. xvi–384.

Transactions of the New York State Medical Association, for the Year 1895. Volume XII.

Annual Report of the Supervising Surgeon General of the Marine-Hospital Service of the United States, for the Fiscal Year 1895.

Ninth Annual Report of St. Margaret's Hospital of Kansas City, Kansas, for the Year ending December 31, 1895.

A Case of Glanders in the Human Subject. By J. Richmond Barss, M. D., Malden, Massachusetts. [Reprinted from the *Boston Medical and Surgical Journal.*]

Check List of the Animal Parasites of Chickens. Circular No. 9. [United States Department of Agriculture.]

Cases Illustrative of Different Forms of Color-blindness. Case I.—Congenital Color-blindness. Case II.—Tobacco Color-blindness. Case III.—Traumatic Color-blindness. By William Thomson, M. D., Philadelphia. [Reprinted from the *Journal of the American Medical Association.*]

Abscess of the Nasal Septum, with a Report of Two Cases. By William Lincoln, M. D. [Reprinted from the *Cleveland Medical Gazette.*]

Turning-points in the Civil War. By Rossiter Johnson. [Reprinted from the *Annual Report of the American Historical Association.*]

Transactions of the American Dermatological Association. The Nineteenth Annual Meeting, held in Montreal, Canada, September 17, 18, and 19, 1895.

The Thirty-fourth Annual Report of the Providence Retreat, Buffalo, N. Y., for the Year 1895.

A Report of Two Successful Hip-joint Amputations, the Second of which was performed by a New Method. By F. Tilden Brown, M. D. [Reprinted from the *Annals of Surgery.*]

A Case of Cystitis, Pyelonephritis, and Pyonephrosis due to Colon-bacillus Infection. By F. Tilden Brown, M. D. [Reprinted from the *Journal of Cutaneous and Genito-urinary Diseases.*]

Subdiaphragmatic Abscess simulating Empyema. By F. Tilden Brown, M. D. [Reprinted from the *Presbyterian Hospital Reports.*]

A Case of Double Ligation of the Vasa Deferentia for Hypertrophy of the Prostate. By F. Tilden Brown, M. D. [Reprinted from the *Journal of Cutaneous and Genito-urinary Diseases.*]

A Case of Urethro-rectal Fistula. By F. Tilden Brown, M. D. [Reprinted from the *Presbyterian Hospital Reports.*]

Creosote Carbonate in the Treatment of Pulmonary Tuberculosis. By William H. Dukeman, M. D., Los Angeles, California. [Reprinted from the *Medical News.*]

The Operative Treatment of Inguinal Hernia, with a Review of Ninety-seven Cases. Preferable Method of Operation. By J. Coplin Stinson, M. D., San Francisco. [Reprinted from the *Medical Record.*]

The Modicum of Hearing of Deaf-mutes. How to Use it, and How to Improve it. By S. T. Walker, M. A., Jacksonville, Illinois. [Reprinted from the *Medical Fortnightly.*]

Du traitement chirurgical de la surdité et des bourdonnements. Par E. J. Moure, Bordeaux.

Ein Fall von erfolgreicher Arsen-Medication bei Hautsarcom. Von Prof. A. J. Pospelow, Moskau. [Sonder-Abdruck des *Archivs für Dermatologie und Syphilis.*]

Miscellany.

The Causation and Treatment of Mammary Abscess.—In the *Lancet* for May 2d Mr. A. Marmaduke Sheild, writing on this subject, says that he has been induced to bring it forward because of its importance in all classes of practice, and because he feels sure that the operative treatment of mammary abscess as ordinarily conducted is by no means satisfactory in its results. The very commonness of the affection, he says, would serve as a sufficient plea for bringing it before a society where men of all varieties of practice meet on common ground. There are many points regarding mammary suppuration of great interest. Not the least are some of the modern methods of treatment and the frequent diagnostic difficulties that from time to time arise. As regards the causation of these affections, though every one connects them with suckling and lactation, yet instances occur in practice which are quite inexplicable on these grounds, and it is here that the special diagnostic difficulties arise which render the subject of mammary abscess so immensely important to surgeons.

During lactation the vascularity of the breast and the rapidity and vigor of its lymphatic circulation render absorption very marked. The organ is engorged with blood and full of an animal fluid, affording an excellent medium for the prolification of organisms. All these considerations are sufficient to explain why the least breach of surface about the nipple of a lactating breast so readily leads to abscess. Modern investigations into the true causes of suppuration exclude engorgements of the mamma as having anything to do with mammary abscess except as a predisposing cause. In former days the milk was thought to be the cause of mammary and puerperal affections. Thus puerperal insanity was termed mania lactea, and iliac phlebitis was commonly termed milk leg. These erroneous terms were first publicly denounced by Meigs, who applied the contemptuous epithet of milkmen to his professional opponents. The organisms found on the skin which are capable of originating suppuration are probably numerous and need not be enumerated. Modern writers on dermatology, especially in Germany, have recognized the fact that many of the suppurative affections of the skin associated with local infective qualities, such as boils, pustules, and impetiginous eczema, are due to the entrance of organisms, especially staphylococci, by minute abrasions or by the mouths of the ducts of the sebaceous glands. Dr. Slater, says the author, bacteriologist to St. George's Hospital, has examined the pus taken from acute mammary abscess. In all of the cases abundant staphylococci were found, principally the *Staphylococcus aureus.* Jamain and Terrier are of the same opinion. Abscess of the breast, according to these authors, is the result of infection. The most common agent is the staphylococcus, sometimes the streptococcus, and, according to Bumm, in exceptional instances, the gonococcus. In accordance with the view that all cases of acute mammary abscess are due to the entrance of organisms from the neighborhood of the nipple, says Mr. Sheild, those cases of so-called acute idiopathic abscess that occur in the unimpregnated condition should be viewed with doubt.

Although in the numerous instances where chaps and excoriations about the nipple become infected with organisms, the staphylococcus—especially the *Staphylococcus aureus*—appears to be common, yet there is nothing to prevent organisms of a more virulent nature from entering the tissues. This, he says, will perhaps explain cases which the older writers used to term diffuse phlegmon of the breast, where the tissues became gangrenous and the patient rapidly sank. Such cases are certainly rare.

Mr. Sheild states that the vast majority of cases of acute mammary abscess are caused by the direct action of organisms which enter the lymphatic channels. There yet remains, he says, another possible method of infection which is of the highest interest, which possibly has not received the attention it deserves—that is, the entrance of organisms along the milk ducts themselves. Nocard, of Lyons, produced tuberculous mammary abscess by injecting tuberculous virus into the milk ducts of a lactating goat. Boissard, in a clinical lecture delivered in Paris in 1893, speaks very positively of the invasion of the milk ducts by streptococci and staphylococci. He terms the resulting suppurative affection galactophoritis. Chassaignac called the disease canalicular intramammary abscess. Nyeth relates the case of a woman, aged forty-two years, who was non-lactating and affected with bilateral mammary abscess, which burrowed through and destroyed both breasts. He terms the case infection of the mammary gland through the nipple and the galactophorous ducts. The de-

struction was so extensive that both breasts were ultimately amputated. The branching nature of the abscesses along the milk ducts, says the author, seems especially to impress the writers upon galactophoritis. It is always open to doubt in these cases that some breach of surface does not really exist, and, he says, although Nocard's experiments place it beyond doubt that infection by the ducts is possible, it is certainly not common.

The influence of blows in causing abscess of the breast is well known. When suppuration occurs in the male breast it is usually due to this cause. Bryant found that of twelve cases eight were attributed to local pressure or injury, causing extravasation of blood. In three cases, which came under the author's observation, abscess of the male breast followed a kick, a blow from the horn of a cow, and the pressure of a shoemaker's last. In these instances, he says, it seems quite plain that a communication is established between an area of tissue containing extravasated blood, the resistance of which is impaired, and the external parts through the torn or injured ducts, and hence organisms may enter and produce injurious effects. Abscess in the breast of infants has been frequently recorded and appears to be largely a preventable malady. The milky exudation which flows from the nipples of some infants is almost entirely due to disintegration of the central cells of the columnar epithelial masses of which the primary gland is formed. When ignorant nurses in these cases pull or rub the nipples a breach of surface is effected by the rupture of a milk duct or abrasion of the integument of the nipple, and, organisms entering, an abscess is the result.

Mr. Sheild briefly reviews the pathological causation of the more chronic varieties of mammary abscess, which, he says, though comparatively infrequent, are not less important than the acute varieties, on account of the numerous diagnostic difficulties and errors to which they give rise. He also summarizes the symptoms of these abscesses as follows: They are indolent in progress, forming chronic and often hard lumps in the breasts of those who commonly exhibit signs of the tuberculous diathesis or have marked hereditary proclivities toward tuberculous disease; the skin is commonly slightly reddened over the centre of the swelling; and finally, when fluctuation occurs and thin, watery pus is evacuated, an unhealthy ulcer with livid, overhanging edges and feeble granulations is generally left. The axillary glands are very often affected, and this, together with the hardness of the swelling in its earlier stages, has probably led to the diagnosis and treatment for cancer being adopted more frequently than surgeons are apt to allow. The symptoms of acute mammary abscess are so well known, he says, that it would be useless to enlarge upon them.

With regard to the treatment of acute abscess of the breast, says Mr. Sheild, the prevention of mammary abscess by expression of milk, and the use of an exhausting bottle to the nipple, is favorably spoken of by Spencer and Beale. The latter also advocates the treatment of mammary abscess by opening with a trocar and cannula, and applying the exhausting bottle to the aperture. While he is ready to admit that this treatment might be applicable to small superficial abscesses, he says, he would hesitate to apply it to deeply seated collections of pus with loculi in the substance of the gland. He feels quite sure that the treatment of acute mammary abscess by the method of establishing a free opening anteriorly radiating from the nipple is essentially wrong. It leaves a scar on the front of the breast and, what is of greater importance, it opens the purulent collection in a position the least suitable for drainage. As a consequence, in many of these cases several operations are needed, until drainage-tubes are seen projecting through various openings and very unsightly scarring results, with subsquent deformity and grave interference with the functions of the gland.

The author describes the following treatment which he has found efficacious in several cases: As soon as elasticity and deep fluctuation are evident, an incision is made radiating from the nipple just large enough to admit the index finger of the operator, and this is deepened until pus flows. The finger is now passed into the cavity, and in the vast majority of cases it will be found that the end of the digit may be brought fairly near the surface in a dependent position, and this is generally at the thoracic mammary junction. In this situation it may especially be noted that scars are hidden from view. Sometimes the finger passes toward the axillary margin, and occasionally the cavity is so large that a stout bent probe must be used to indicate the deepest part of the abscess. In this situation, the gland being well raised by an assistant, a free opening is to be made, large enough to evacuate the pus well, and the finger being now introduced through this, the inferior opening, the operator will be surprised to find that the pus has burrowed about, and is contained in loculi bounded by fibrous septa.

It is especially noteworthy, he thinks, that in many cases quite a narrow channel toward the nipple connects the deep abscess with the more superficial collection of pus opened anteriorly, and it will then be clearly understood how inefficient drainage is in the practice of those who are content with a small incision anteriorly in these cases. The remainder of the treatment is obvious; the cavity is well flushed out with whatever agent the operator fancies, and a full-sized tube is introduced from below. The opening made near the nipple is closed with fine horsehair and painted with collodion. It readily unites with only a faint scar, and the free drainage prevents the possibility of the recollection of pus and a necessity for further operation. The tube, a large one, can be left in the cavity as long as needful, and is then slowly shortened and withdrawn. It may seem superfluous to mention that the drainage-tube should be secured with a piece of silk, but the fact of the tube having entered an abscess cavity, and having been retained there, or only removed by a troublesome operation, must not be lost sight of. This accident may readily happen unless special care be taken. The unsightly scar is completely hidden by the position and volume of the gland above.

The treatment of chronic abscess of the breast, continues the author, is a matter of greater difficulty and must ever raise differences of opinion. In regard to the importance of exploratory incision which has already been raised, he makes a statement which, he says, may seem exaggerated, but which experience and a perusal of the literature of the subject permit him to positively advance. There is no symptom of scirrhous cancer of the breast which may not be simulated by a chronic abscess inclosed in a dense mass of inflammatory material, and unless exploratory measures are made as a matter of course grave errors of treatment will occasionally arise. The diagnosis of chronic abscess being established, one of the first thoughts which should arise is as to the presence or absence of tubercle. The thin and watery nature of the pus with the presence of caseating material in the walls of the abscess is one of the best naked-eyed tests that can be applied. Many writers, he says, seem to be in favor of removing the entire breast in cases which appear to be of a tuberculous nature. With reference to this very important point in operative surgery much will depend upon the extent of the disease. In disseminated tubercle, where several ab-

scesses or masses of caseating material are disseminated in the breast, removal of the entire organ, with possibly the axillary glands also, is undoubtedly the right treatment to adopt. With regard to non-tuberculous chronic abscesses there is again no absolute rule. When the abscess is surrounded by tolerably healthy mammary tissue and has moderately thick parietes the free use of the spoon, with scraping and flushing and drainage in a dependent position in the thoracic mammary furrow, will give good results. But if the abscess is inclosed in a dense mass of inflammatory tissue infiltrating the greater part of the breast, and especially if the patient is at the age when scirrhus is frequent, removal of the entire organ is, he thinks, the wiser course to pursue. Regarding this question, says Mr. Sheild, there is much difference of opinion. It is always most difficult in practice to determine at the moment what is best for the patient, and the operative treatment of chronic abscess of the breast is eminently one for consideration and discussion. He believes that breasts are removed too frequently for these affections, and that free drainage in a dependent position with erasion and flushing will negative the necessity for the more serious operation in the vast majority of cases we meet with in practice.

Privileged Legal Information.—In last Sunday's *Sun* there appeared an anecdote which is of interest as showing that ours is not the only profession that has to struggle with matters of conscience, and as illustrating the fallacy of the popular belief that lunatic asylums contain many sane and wronged inmates. The *Sun's* story is as follows:

"They were discussing the Kitson-Playfair case, which stirred up London and the professional world, in the office of a down-town lawyer the other day, and one of those present, a lawyer of considerable standing at the New York bar, told this story of an experience of his own. It happened only a few years after he had been admitted to the bar, and before he had accumulated the wide experience which would enable him now to settle the difficulty offhand. He was retained one day by a woman to secure the appointment of a committee of the person of her husband, who had been for nine years an inmate of an insane asylum. The man had had a claim against the Government which had been a long time in litigation. At last the award was made, and then the Treasury Department refused to pay the money until the bonded committee was appointed.

"To the lawyer's question as to why the woman had had her husband committed to the asylum, she replied that he had been ugly to her for some time, and that finally he had become violent and had attacked her. Then she had him committed. A few days after this interview with his client the lawyer sent his clerk to the asylum to serve the customary papers on the alleged insane man and on the warden of the asylum. The clerk returned in considerable excitement.

"'The man is as sane as you or I,' he said to the lawyer. 'I talked with him for a long time, and could not find a subject upon which he was not rational.' The clerk reported that, when he had served the papers on the alleged insane man, the asylum inmate had said to him: 'Why, I am no more insane than you are. I know all about this thing. It's a put-up job on the part of my wife and an old friend of mine. She is living with him now, and has been living with him ever since they got me put in here.' 'Well, why haven't you made efforts to get out?' asked the clerk 'Made efforts to get out!' exclaimed the man. 'Do you suppose I've been here nine years without trying to get away? That would be a crazy trick, sure. But you just think it over in cold blood and see what sort of chance a man in my fix has got. I came here formally declared insane. Half the crazy people here think they are sane and keep protesting their belief to the keepers and the warden and to visitors, to any one, in fact, who will listen to them. It's the proper thing for a crazy man to do, and the finer his story of outrage the crazier most people think him, and, for a fact, in most cases the crazier he is. I found that out mighty soon after I got here, and I knew enough to keep still. If I had had any money I might have been able in some way to secure the help of a lawyer who could have investigated the circumstances of my committal, but they watched that pretty well when they sent me here, and I've never had that chance. It's a wonder, though, that I am not crazy. It takes a good man to associate with such a pack of loons as they've got here for nine years and not lose his reason.' After that the clerk talked with the man about his family and himself and all his business affairs. The conversation was general and particular, and the clerk went away satisfied that the man was really the victim of a criminal conspiracy. The clerk's enthusiasm and certainty as to the condition of the alleged insane man put the lawyer in a quandary. He didn't know exactly whether to go on with his case or not. If a crime was being carried out he wanted to know it, and he didn't propose to have anything to do with it. At first he thought he would go to the asylum himself and see the man. But afterward he concluded to see the woman again before he took any further action. As he delayed seeing her he gradually arrived at the conclusion that it might be better, after all, to complete the work which he was retained to do, and then he would be free to act as he chose.

"It was several weeks before he could arrange another interview with his client. Then he prepared the usual affidavit for her to sign, setting forth the facts of her husband's commitment to the asylum. The practice was then to accept the fact of the long confinement in an asylum as proof that the patient was insane, and the appointment of a committee of the person was usually made on such an affidavit.

"When the affidavit had been executed the lawyer asked his client again about the reasons which had led her to secure the committal of her husband to an asylum. To his amazement she told him a story that in some essential details was an exact contradiction of the story she had told him scarcely two months before. He taxed her with the discrepancy at once. For a moment she was confused. Then she recovered her self-possession, said she had made a mistake, and immediately added circumstances to the second story which might reconcile it with the first. But the lawyer went away dissatisfied and more than half inclined to believe that the story of the man in the asylum might be true, although he had seen no direct evidence to bear it out.

"'Now,' said the lawyer, when he had told this much of the story, 'what would you fellows recommend as to the procedure of a man in such a fix, particularly in view of this verdict against Dr. Playfair? My information in regard to the imprisoned man was privileged. I never heard of him until I was retained by his wife. Had I a right to use the information I obtained from her and through her in a proceeding against her?'

"'No,' said one of the oldest lawyers there, 'you had not such a right. But the information your clerk brought you was not privileged. It was obtained in the ordinary course of business. You were not sure that it was a fact. You certainly were entitled to investigate. If a crime was being committed, no obligation to your client, fancied or real, could make you a party to it unwillingly, and you were entitled to use

your information to frustrate it, or to bring the criminal to justice. In the same way it is always the practice for physicians to report to the police suspicious deaths, although their only information is professional, and, in supposition, privileged.'

"Then followed a general discussion. Some of those who had heard the story contended that the young lawyer should have dismissed his client at once and proceeded to secure the liberation of the wrongly imprisoned man. Others stoutly declared that his information was privileged, and that it was against the ethics of the profession for him to use it in any way against his client, even by securing information as to the man by a roundabout means, if he started from information obtained from his client. Some advised consultation with other lawyers with a view of having them proceed to get the man out of the asylum. When the discussion had been going on for some time, some one turned to the lawyer who had told the story and asked:

"'What did you do?'

"'I got out of it,' answered the lawyer, 'very well. I fulfilled my obligation to my client to the letter and dismissed her. Then I set about the liberation of her husband. I made up my mind that, if he was sane, I would get him out of the asylum. Then he could do what he liked in the matter of prosecuting the criminals who had conspired to deprive him of his liberty. Well, I saw him several times in the asylum, and was convinced that he was sane and that his story was true. Then I went into the Supreme Court and got a writ of habeas corpus. I went up again myself to the asylum to serve the writ on the warden and I had another talk with the supposed insane man. The warden told me that he had never seen anything about the man that definitely and in itself indicated insanity. But there was a general bearing which made him suspicious, what the physicians call a diathesis when they can't find a more definite word. He could not point to any insane act on the man's part, and yet he was satisfied that the man was not sane.

"'Well, I talked with the fellow again, a general conversation on all sorts of subjects. He was an American and a veteran of the war of the rebellion. We got to talking about our experiences, and I told him about how I got at Petersburg the bullet that made this scar on my cheek. I don't know what memory I stirred up, but the man leaped at me with a frightful yell, shouting that I was the man who had tried to shoot his head off. He was as crazy as a bug and he died in the asylum.'"

Professional Secrecy.—Under this heading the *British Medical Journal* for April 25th prints a number of letters that seem to have been called forth by reflection on the action for libel lately brought against Dr. Playfair. One correspondent says: "First, as to pregnancy, the proper view to hold is that it is not a diseased condition at all, and if possible to refuse to examine the patient. But if the woman (before a witness, if it can be managed) expresses her readiness to submit to an examination, or if she comes with an ulterior purpose, what is to be done? Even then it may be better policy to temporize, if one can. In two instances where I had been frank enough to tell the truth, I found it indignantly denied, and after a convenient absence of a few weeks from home, a triumphant attitude of entire innocence was successfully assumed and maintained, and I was set down as an ignoramus, if not worse. Where, on the other hand, the woman frankly confesses, there is no need to take personal action. Point clearly out to her the risk she runs by concealment, and kindly, but decidedly, insist on her making confession to her mother or other near relative, and the chances are the revelation will be made without your intervention at all.

"Second, 'E. G. D.'s' case of syphilis. Clearly, here the present law needs amending. Venereal diseases should be notifiable—but notifiable with a difference. In such cases, and it may be in others present within the legal category, it might very easily be arranged that such notifications come only within the ken of the medical officer of health, and be entered by him in a private register. This private register might also well meet the case referred to by Dr. Hamilton, one which every practising doctor must well know—namely, that of inherited syphilis in a child. The ordinary certificate might bear the particular lesion which the baby suffered from, such as 'atrophy,' while the medical attendant might certify privately to the medical officer of health the particular or specific element in the case. Going back, however, to 'E. G. D.'s' case of syphilis, the common-sense course would be to warn the patient to stop dispensing milk by telling him plainly that if evil results were to follow you would be compelled in a court of law to swear that he was the direct cause of the mischief, and that his punishment would be of the severest kind. It would be quite easy to guard the patient by informing his master that he was suffering from a skin disease that made it necessary both for the patient and the public that he should be stopped touching the milk till he was cured. I see no difficulty in putting the matter quite strongly, and yet not hinting in any way at specific disease. As a practical suggestion, I would say certainly send him to a hospital at once. A hospital doctor can take care his patient does not infect any other person; a private practitioner can not always make sure of that.

"It is to be fervently hoped that the ultimate outcome of all the discussion will be a clear appreciation of the sanctity of all confidences given to a doctor as much as they are to a lawyer. There is no need for any change of the law. In spite of jurists, law is, like everything human, subject to evolution. This process has now reached the stage where it only requires a good case and a firm champion to take a decided stand, and to resolutely refuse to divulge such secrets. The public and the profession will back him up in a good cause, and the victory will then be finally won."

Another says: "I am one who thinks it quite time we had some clear guidance on this matter, especially as to criminal abortion, far commoner than men not in general practice have any idea of. It seems as a matter of common sense, as distinguished from legal correctness, that we ought to inform the police of such cases, for the criminals can only be sought out by the disasters to their victims, and even at an inquest it seems one is not safe in giving honest evidence.

"If a citizen may not lawfully see a tramp steal a pair of boots from a shop door without giving notice of the fact, why should he, being a doctor, see a 'herbalist' ply his nefarious trade with impunity, well knowing that for one case in which he suspects the offense dozens go undiscovered? Why again should one fight disease from a sense of duty, and at the same time allow crime to stalk abroad unnoticed? On what ground is it so universally assumed that the duty to the individual patient is to invariably swamp the duty to the general community? Opinion is so lax in this matter of abortion that no attempt seems to be made to inquire into cases not fatal to the mother, and in these cases I never remember the perpetrator to have been tried for murder, which it then, I believe, becomes in law. One frequently sees more or less covert advertisements of the means of procuration, and a 'Police Notification Act' would be hardly

more outrageous than the present condition of things. But whatever is to be our legal duty and position, reasonable or ridiculous, we badly require some leading principles."

Another writes as follows: "Two years ago I was called in to attend a lady who had taken poison with a view to suicide, and who had a narrow escape from death. On recovery she openly threatened to repeat the crime. Her niece was cognizant of her act and assisted in treatment, and both she and I did our utmost to bring moral influence to bear on the patient. I did not conceive it my duty to inform the police either of the attempted crime or of its contemplated repetition. With regard to the former point my conscience remains easy, but I should be glad of your expression of opinion as to the latter. I had no reason to doubt that the patient would do as she threatened, though I believe she has not done so."

Another case is presented as follows: "Some few weeks ago a servant girl consulted me unknown to her mistress. I found her suffering from secondary syphilis, with mucous tubercles, etc. She slept in the same bed with another servant girl, and, although a housemaid, helped the nurse to wash and dress the children in the house. I warned her of the danger of infection, and strongly urged her to leave her situation and to go where there would be less chance of conveying the disease to innocent persons; she, however, refused to do so, and remains at the present time in her situtation. I have warned her repeatedly of the danger, and have also endeavored to minimize the risk by the adoption of precautionary measures. As this woman came to me trusting to my honor not to divulge her secret, I have not warned her mistress, nor do I propose to do so. A doctor, as I understand, is not a custodian of public morals, nor is he above those laws which are binding upon lawyers not to divulge the secrets of his client which he has learned in his professional capacity. I should, however, be glad to know whether I am considered to have adopted the right course in this difficult case."

Another correspondent says: "Allow me to mention the following, and to state that should I be placed in a similar difficulty again I should get out of it precisely in the same way. Some time ago a lady called to tell me that her servant girl, of whom she was very fond, as she had been with her for many years, had not been very well for some weeks, and was looking decidedly ill. She had persuaded her to go to a doctor, though she refused at first, saying she would get all right soon, and she would come to me that evening to be examined. The lady added she would call again the following day so that I could tell her what was the matter with the girl and what treatment should be adopted. When the girl came I had no difficulty whatever in ascertaining the cause of her illness. It was a pregnancy of three to four months' standing, and my patient herself suspected as much. When I told her that her suspicion was right, she commenced to cry, and begged of me not to tell her mistress, as she would lose her situation, which was a very good one, and, in addition, forfeit her character, which would prevent her from obtaining another place. What should I do? To give her mistress an evasive answer would be tantamount to telling the truth, and that I would not have done under any circumstances. I therefore decided to tell a 'white lie' in the shape of a wrong but definite diagnosis, fully satisfied in my own conscience that to do otherwise would be cruel and unprofessional conduct. I told the girl what I should do, leaving her to work out her own salvation; and she left me with expressions of gratitude and relief. I heard no more of the matter."

The last letter is this: "I was called in to a man who attempted suicide by morphine and recovered; it was a very determined attempt. A day or two after a police inspector called and asked if I had treated such a case in such-and-such a road. I would not answer him either way, on which he said that he knew that I was the doctor called in, and that I might get myself into serious trouble if I did not tell him all about it, on which I said that I was not a detective nor a member of the police force, but that my business was to cure my patients, and there my responsibility ended.

"Another case. A man shot himself in the temple and lived for a few hours after. When he was dead and I had left the house I told the constable on the beat to report it to the coroner's officer. When giving evidence at the inquest the coroner—I must say in a very courteous manner—pointed out to me that I ought not to have waited till my patient died, but let the police know at once, as he had broken the law. I answered that the man was clearly dying, and I did not care to add to the suffering of the wife and children by calling in a constable and giving him in charge.

"As regards the first of the above two cases, I was in considerable doubt at the time as to whether I was doing right; as to the second case, I must confess that the thought of calling in a policeman and giving a dying man in charge never entered my head, and, according to the latest legal ruling, I am very glad I acted as I did in the above cases. If our position with regard to our patients was as clearly defined as that of a Roman Catholic priest with regard to knowledge obtained in the confessional box, no medico-legal doubts would arise as in the above two cases."

The *Lancet* for May 9th, after giving a summary of the Kitson-Playfair case, and forbearing to discuss its legal aspects, says: "But beyond the four corners of the law there is ample field for meditation. Never was the question of professional etiquette more forcibly presented. It must be allowed that there is no written code to guide a practitioner in every case in which his discretion and judgment are evoked. There are those which it would be subversive of all moral rule to divulge. There are those which it is his bounden duty to disclose; but on the frontier between compulsory secrecy and publication there are many instances every one of which must be decided upon its particular merits. It may be held to be a safe formula that, unless there are overpowering reasons to the contrary, a patient's secret should be held inviolate by his medical adviser almost, if not quite, as binding as the confessional of the Roman Catholic priesthood. Where it involves the actual commission of crime, morality and justice require the breaking of a confidence which the recipient should never have been asked to accept. Where it is supposed an illegal act is contemplated the line of action is not so clear. Mr. Justice Hawkins had in mind such a contingency when he asked Sir John Williams what he conceived would be his duty if consulted professionally in a suspicious case of criminal abortion. Sir John Williams, without hesitation, replied he would communicate with the public prosecutor. 'I am not so sure you would be doing right,' came the rejoinder of the learned judge. There is much to be said on both sides. In the first place, it is obviously every one's duty to prevent the immediate commission of a crime and to deter from more remote repetitions of such. Moreover, failure to guide the hand of justice may strengthen the evil intents of ill-doers. We should say, on the other hand, that unless the information possessed by the medical practitioner is sufficiently weighty to make it reasonably certain that the allegation will be sustained it is better to observe a discreet silence.

"Reverting to the basis of our special commentary, we

feel it our painful duty to assent to the proposition that Dr. Playfair did not act as discreetly as he might have done. Was it wise to place such alternatives before Mrs. Kitson as it was proved in evidence he did place? To a statement in one of Mrs. Kitson's letters to him suggesting, though not defining, an explanation of her innocence he lent a willing ear, although there was no evidence forthcoming that there was reasonable probability of the existence of such grounds of exculpation. We refer to the question of a visit to England by Mr. Kitson. It seems that at that time Dr. Playfair was struggling between two opposing forces—the one compelling him, out of human pity and from a sense of professional duty, to keep secret the conclusions at which he had arrived; the other to shield his family from the pollution which, he thought, further social intercourse would entail. While recognizing his perilous position it would have been well, we think, had he sought in confidence the help and advice of some distinguished members of the profession. In so doing he would have proved better than in any other way that midst all his undoubted difficulty and trouble he was striving to act justly between man and man. Although we are unable to indorse as fully as we could have wished the course and tenor of his action, we can not but regret his misfortune, and tender the sympathy such misfortune claims."

Bromoform in the Treatment of Whooping-cough.—In the *Revue internationale de médecine et de chirurgie* for April 25th there is an abstract of an article by M. Marfan, published in the *Revue des maladies de l'enfance*, in which the writer states that the author has employed bromoform in forty cases of whooping-cough with good results. He thinks that for diminishing the intensity and the number of attacks of the cough it is superior to antipyrine and to belladonna, and he recommends the following formula:

Bromoform	48 drops;
Oil of sweet almonds	300 grains;
Gum arabic	60 "
Gum tragacanth	30 "
Cherry-laurel water	60 "
Water, sufficient to make	4 fl. oz.

M.

One teaspoonful of this mixture contains two drops of bromoform.

For children under six months, the daily dose is from two to three drops; for children of from six months to a year, from three to four drops; in all cases the daily amount should be divided into three portions.

Under the influence of this treatment, says M. Marfan, the following modifications will generally be observed: For the first two or three days the attacks of coughing will appear to be aggravated in frequency and intensity, but from the third or fourth day a marked relaxation occurs, and the attacks diminish in number and violence. The vomiting disappears, the appetite returns, and the child recovers without any other symptoms manifesting themselves.

This treatment may not always be successful, says the writer, for M. Marfan cites three cases in which no results were obtained with bromoform. Generally, however, the author employs this drug in the beginning of the disease in preference to all other antispasmodics.

The Hospital Graduates' Club will hold its eleventh anniversary dinner at the Hotel Hungaria, in Union Square, on Friday, the 29th inst.

Traumatic Rupture of the Heart.—At a recent meeting of the Société des médecins russes, a report of which appears in the *Presse médicale* for May 2d, Dr. Onskoff reported a case of rupture of the heart which occurred in a mechanic who was killed by the explosion of a locomotive near which he had been working.

The autopsy revealed fractures of the third rib and of the cartilage of the fifth rib, also the following cardiac lesions: The left wall of the pericardium was torn, but the auricles were intact. The ventricles were torn in several places, also the interventricular sæptum. There were no ecchymoses on the cardiac walls; the endocardium was almost intact, but it was transparent at the apex of the left ventricle. The papillary muscles and the tendinous cords were pulled from their attachments in the left ventricle; the valves were intact and presented no appreciable change to the naked eye.

According to Dr. Onskoff, rupture of the heart in this case may be compared to that of a balloon filled with water to which a violent blow has been given.

Erysipelas Serum in the Treatment of Cancer.—Dr. Eugen Hirschfeld contributes an article on this subject to the *Australasian Medical Gazette* for March 20th in which he says that the researches of Emmerich and of Scholl in regard to this treatment were based on the fact, established by repeated observations, that malignant tumors had been found to disappear in some patients who, while suffering from the tumors, were accidentally infected with erysipelas. In order to produce by treatment what had occurred by accident, Neisser and Fehleisen inoculated in cases of hopeless cancer with pure cultivations of virulent erysipelas cocci, but they soon gave it up, says the author, on account of the many untoward accidents connected with the method. Professor Bruns, he says, reported a case of melanosarcoma of the mamma of the most malignant type in which extirpation was done. The disease recurred before the wound healed, and at about the same time the patient became infected with a serious wandering erysipelas, with the result that the new growth disappeared without leaving a trace behind. Six years later Professor Bruns was able to state that the patient had remained cured. In looking over the literature on the subject, Professor Bruns, says Dr. Hirschfeld, found three cases of undoubted complete and permanent cure of sarcoma by natural or artificial erysipelas, but he states emphatically that there was no case of carcinoma in which the cure had been established beyond all doubt. Successful observations were communicated also by Biedert and Bush; but Emmerich was the first who undertook to put the matter on an experimental basis, as early as 1886. He obtained the following results:

1. Acute cases of anthrax in animals can be cured by inoculation with erysipelas cocci.

2. The curative power of the erysipelas cocci is not centred in the cocci themselves, but in certain changes brought about in the blood under its influence, so that it obtains antibacterial qualities.

3. The blood serum of animals infected with erysipelas possesses the same curative powers as the erysipelas coccus itself.

As cancer is limited to the human species, says Dr. Hirschfeld, it was impossible to carry out similar experiments in animals; but, as they had found that the injection of blood serum of beasts infected with erysipelas was as efficient as the inoculation with the erysipelas coccus itself, while on the other hand it was not accompanied by the same serious symptoms as the inoculation, they concluded to try it in human beings in such cases as were beyond the reach of operation.

The number of patients suffering from malignant tumors (carcinoma, sarcoma, and lymphoma malignum) who have

been treated hitherto by the erysipelas serum has been so far comparatively small, and the results obtained by different observers extremely contradictory. *A priori*, says the author, we must remember that the time is altogether too short to allow a definite opinion to be formed on the subject. The beginning of the serum treatment of cancer dates back only as far as the beginning of last year. Even suppose all the patients had been cured by the injection of the serum, he says, we should certainly allow a much longer time to elapse before we could pronounce them completely and permanently cured. In two successive publications, Emmerich, Scholl, and Zimmermann report altogether eleven cases with partial or complete temporary success. It is very much to be regretted, he thinks, that the authors do not publish the total number of patients who were treated by the new method, as we certainly gain the impression, when reading their communications, that the number of patients reported is very small in proportion to the number who have been treated. They mention only that the erysipelas treatment had been without effect in two cases of far-advanced carcinoma in which secondary infection was accompanied by extensive ulceration.

Of these eleven patients, eight were suffering from carcinoma—seven of which were located in the mamma—one from epithelioma, one from sarcoma fusicellulare of the thigh, and one from sarcoma faciei. The diagnosis was ascertained by microscopical examination, and most of the patients had been operated upon repeatedly without any success by leading German surgeons, and had been handed over to Emmerich for the serum treatment as hopeless cases.

In two instances the original tumor disappeared entirely, while in all a great diminution in size and improvement in general appearance, like cicatrization, were observed. The very great improvement in general health, says Dr. Hirschfeld, is of minor value, as the mental effect alone of a remedy that promises cure to a hopeless patient would be sufficient to bring that about. The results obtained by Professor Bruns in Tübingen, he says, are very much less satisfactory, although he used serum sent by Emmerich. He subjected six patients to the treatment. Four were suffering from carcinoma, one from lymphoma malignum, and one from sarcoma. A diminution in the size of the tumor did not take place in any single instance. The treatment was eventually broken off on account of several serious symptoms arising therefrom. In three patients, immediately after the injection, attacks of dyspnœa, cyanosis of the face, heart palpitations, and vomiting supervened. In another case the fever rise of temperature, which generally follows the injection as reaction, developed into fever lasting for eight days, with severe pains in the joints. The appearance of albuminuria and numerous granulated cylinders in the urine compelled Bruns to discontinue the treatment in the fifth patient.

It must be pointed out, however, continues the author, that these serious complications just mentioned may be due to accidents which it should be possible to avoid. The continued high fever may be due to a not perfectly sterile condition of the serum. The sudden attacks of dyspnœa were caused, as Emmerich suggests, by the accidental insertion of the injecting needle into a vein, thus flooding the circulation at once with the whole of the serum; he himself met with the mishap but once. Coley, who experimented first with the combined toxines of prodigiosus and erysipelas cocci cultivations, noticed, on the whole, good results, which were, however, more distinct in sarcoma than in carcinoma.

Dr. Hirschfeld cites several cases in which this treatment was employed with varying results. He has endeavored to collect all the material that is available in the literature on this subject, he says, and, after a review of the whole matter, including his own observations, he comes to the following conclusions:

1. The injection of erysipelas serum into patients suffering from malignant new growths produces a reaction which consists in a rise of temperature, accompanied by a corresponding increase of frequency of pulse, which generally returns after a short time to the normal.

2. The influence upon the tumor itself is very distinct. The serum induces a change, the principal characteristic of which is retrogressive metamorphosis, which begins with a fatty degeneration of the cellular elements composing the tumor, leading to melting down, and afterward, in some cases, to the entire absorption of the new growth.

3. If due care is taken in its preparation, the injection of erysipelas serum is not followed by the appearance of erysipelas.

4. The action of the serum, according to all observers, is more powerful in sarcoma than in carcinoma. Even melanotic sarcomata of the most malignant type may be made to disappear under the influence of the erysipelas toxine.

5. The serum signally fails in some cases to benefit the patient, although the injection is followed by the usual reaction.

6. The untoward accidents connected with the treatment which have been observed so far are—(*a*) severe rigor, lasting for thirty-five minutes, followed by rise of temperature up to 104·4° F.; (*b*) severe dyspnœa, cyanosis, vomiting, and palpitation of the heart, lasting from ten minutes to half an hour; (*c*) the appearance of albumin and cylindrical casts in the urine; (*d*) continued remittent fever.

7. These accidents are caused—(*a*) by the serum not being in a sterile condition; (*b*) the insertion of the injecting needle into a blood-vessel; (*c*) variation of different kinds of the serum not explained hitherto.

8. The principal points of interest for the general practitioner are, whether it will be possible to avoid these accidents in future. We can easily dismiss the second point, the insertion of the injecting needle into a blood-vessel. If attention is only drawn to the existence of this danger we shall be able in most cases to elude it by ordinary care.

With regard to the serum not being in a sterile condition when used, says Dr. Hirschfeld, a good deal of bacteriological experience is required in the operator to avoid this risk. Perhaps it would be possible to do away with it altogether by adding an antiseptic (0·5 per cent. of carbolic acid) to the serum, as in the case of the diphtheria antitoxine. A further concentration of the serum is necessary, however, if this plan is carried out, or otherwise too great a quantity of carbolic acid would be injected at the same time, which by its chemical action might possibly have an injurious influence and interfere with the action of the antitoxine.

The third point, the apparently unexplained variation of different kinds of serum, is the most serious, and one, he says, that most of those who have used the serum have experienced. Emmerich and Scholl mention that the difference in breed of the sheep used for the experiments has been one cause. It is certainly advisable to get the original serum from Germany, although the difficulties in bringing the serum to the proper standard have not been quite overcome yet. Besides, it is not at all certain whether it would keep. Professor Bruns experimented with serum which he had received from Emmerich himself, and albuminous deposits which contained micro-organisms were found to have formed within a few days. The addition of an antiseptic, as suggested before,

might overcome it. One way of lessening the danger would be to inject a certain quantity of each supply into an animal, and to reject it altogether if an abnormal rise of temperature was observed to follow.

9. The efficiency of the serum treatment may be increased, as has been shown by Emmerich and Zimmermann in their last communication, by following it up with the inoculation of the erysipelas coccus itself. The previous injection of the antitoxine makes the subsequent injection run a more benign course. The success achieved by the authors, in a far-advanced case of cancer of the tongue, with secondary infiltration of the submaxillary and cervical glands, has certainly been most remarkable.

The method of the treatment of malignant tumors by the injection of erysipelas serum, though far from being perfect, says Dr. Hirschfeld, has been successful in some otherwise absolutely hopeless cases, and it promises to do more, and has done more, than any other treatment at our disposal.

The New York State Medical Association.—At the annual meeting of the First District Branch, which was held in Little Falls on Tuesday, the 19th inst., the following papers were on the programme: Remarks on Empyema, with a Report of a Recent Case, by Dr. Douglas Ayres, of Fort Plain; A Class of Fatal Cases presumably Due to Intestinal Ptomaines, by Dr. E. D. Ferguson, of Troy; The Diagnosis of Posterior Sclerosis, by Dr. William H. Robb, of Amsterdam; The Recent Epidemic of Measles in Little Falls presenting Some Peculiar Features, by Dr. Edgar H. Douglas, of Little Falls; The Treatment of Weak Heart, by Dr. W. D. Garlock, of Little Falls; and A Report of the Atlanta Meeting—its Scientific Worth and Social Aspects, by Dr. E. D. Ferguson, of Troy.

The twelfth annual meeting of the Fifth District Branch will be held in Brooklyn, on Tuesday, the 26th inst. The programme includes the following papers: The President's Address, by Dr. J. R. Vanderveer, of Orange County; Biographical Sketches of the late Dr. Frederick M. Warner (by Dr. Stephen Smith), the late Dr. Richard Van Wyck (by Dr. I. D. Le Roy), the late Dr. George Wieber (by Dr. N. W. Leighton), and the late Dr. William O'Meagher; The Value of the Practice of Medicine, by Dr. Louis F. Criado, of Kings County (to be discussed by Dr. J. des Risco, of Brooklyn, and others); The Effects of Reflex Irritation on the Temperature and Pulse of Young Children, by Dr. George W. Newman, of Kings County; Latent Mastoid Disease, by Dr. Edward Fridenberg, of New York County (to be discussed by Dr. Arthur Mathewson, of Brooklyn, and others); Enteroptosis, by Dr. Max Einhorn, of New York County (to be discussed by Dr. Jacob Fuhs, of Brooklyn, and others); The Diseases of the Skin observed in a General Practice of Twenty-five Years, and their Most Effectual Methods of Treatment, by Dr. Charles E. Lockwood, of New York County (to be discussed by Dr. J. McF. Winfield, of Brooklyn, and others); How can Suppuration be Best Prevented in Acute Pevic Inflammations? by Dr. William R. Pryor, of New York County (to be discussed by Dr. J. H. Etheridge, of Chicago, and others); and The "Comedy of Errors" in the Technics of Modern Operative Surgery, by Dr. Edward von Dönhoff, of New York County.

The Third International Congress of Psychology will be held in Munich on August 4th, 5th, 6th, and 7th, under the presidency of Professor Stumpf, of Berlin. The preliminary programme gives the following list of titles, being all that had been received up to April 15th: On Color-syncrasy (Researches on Induction Mingling and its Relation to Induction Contrast), by Mr. Birch-Reichenwald Aars, of Christiania; On the Psychological Formation of the Pedagogue, by Dr. Andreae, of Kaiserslautern; On the Sentiment of Honesty in Children, by Signor Luigi Anfosso, of Fossano, Italy; Psychological Experiments on the Insane, by Dr. Gustav Ashaffenburg, of Heidelberg; The Psychology of Youthful Murderers, by Dr. Baer, of Berlin; The Principles of Suggestive Pedagogy, and The Pedagogic Value of Hypnotic Suggestion, by M. Edgar Bérillon, of Paris; Suggestive Impulse as a Therapeutic Measure, by Professor Bernheim, of Nancy; A Continuous Succession of Tones for the Recognition of Defects of Hearing, and its Significance in regard to Helmholtz's Theory, by Professor F. Bezold, of Munich; Winter Sleep and Infection, by Dr. Billinger, of Munich; An Experimental Demonstration in Music Recorded by the Graphic Method, by Dr. Alfred Binet, of Paris; Researches on the Capillary Circulation in its Connection with Psychological Phenomena, by Dr. Binet and Professor Courtier; On the Appreciation of Time by Somnambules, On the So-called Automatism of the Hypnotic Subject, and A Few Cases Illustrating the Medical and Surgical Value of Hypnotic Treatment, by Mr. Milne Bramwell, of London; On Some of the Consequences of Deficiency of the Power of Perceiving Small Magnitudes, by Professor Franz Brentano, of Vienna; How Far do Prehistoric Discoveries warrant a Conclusion as to the Psychology of Man in the Stone Age? by Dr. Buschan, of Stettin; Contributions to a Knowledge of Individual Variations of Memory, by Dr. Jonas Cohn, of Berlin; Questions in Psycho-physical Principles, by Dr. Hans Cornelius, of Munich; On Musical Memory, by Professor Jules Courtier, of Paris; Heredity in Psycho-pathology, and Suggestion in the Waking State, by Dr. J. B. Crocq, of Brussels; Some Experiments in Distant Mental Suggestion, by Dr. Dariex, of Paris; On Criminal Suggestions, by Professor Delbœuf, of Liège; On Artistic Psychology, and A Proposition to Establish a Commission for Founding an International Bibliographical Review of the Psychological Literature of Different Languages, Subordinate to the Continuation of Systems of Report hitherto in Use, by Dr. Max Dessoir, of Berlin; Contributions to the Psychophysical Method of Correct and Mistaken Cases, and On a New Method of Testing Mental Capacity, and its Employment on School Children, by Professor Hermann Ebbinghaus, of Breslau; Can Psychology Profit by the Present State of Cerebral Anatomy? by Professor L. Edinger, of Frankfort on the Main; On Ethical Feelings of Value, by Dr. Christian Freiherr von Ehrenfels, of Vienna; The Influence of Light-perception on Vascular Tone, and The Influence of Color-perception on Vascular Tone, by Dr. S. Sigismund Epstein, of Berlin; On the Conditions of Reading, by Professor Benno Erdmann, of Halle on the Saale; On Autokinetic Movements, by Professor Sigmund Exner, of Vienna; Experimental Researches on the Memory of Lines, by Dr. G. Cesare Ferrari, of San Maurizio, Italy (in collaboration with Signor Vaschide); On the Association Centres of the Human Brain, with Anatomical Demonstrations, by Professor Paul Flechsig, of Leipsic; On the Association of Figures in Different Individuals, by Professor Théodore Flournoy, of Geneva; On the Development of the Judgment in Primitive Peoples, by Dr. Max Friedmann, of Mannheim; On the Cure of Functional and Organic Aphasia, and The Speech of Children and of Primitive Peoples, by Dr. Hermann Gutzmann, of Berlin; A Genetic Study of Primitive Emotions, by Professor Stanley Hall, of Worcester, Massachusetts; On the Relation between Psychical Treatment in the Waking State and Hypnotic Treatment, by Dr. Ewald Hecker, of Wiesbaden; To What Extent is Voluntary Motion Dependent on Integrity of the Centripetal Nerves? by Dr. E. Hering, of Prague; On Suggestion Treatment, by

Professor Ludwig Hirt, of Breslau; Do Modifications in the Interpretation of Sensory Perceptions (especially Plastic Sight) Depend on Individual Experience Alone, or not More Probably and in a Greater Degree on Inherited Physiological Disposition? and On His Doctrine of the Delusion or Sign Systems and their Significance in Psychophysiology and Psychiatry, by Dr. Georg Hirth, of Munich; Modifications of Attention in Nervous Diseases Characterized by Alterations in the Time of Reaction, and The Need of Hypnotism in Hysterical Persons and the Need of Direction in Doubters, by Professor Pierre Janet, of Paris; The Psychology of the False Ideas of the Insane, and Hypnotism and Suggestion as Pedagogic Aids, by Dr. Arie de Joug, of the Hague; On the Proportion of Medullary Fibres of the Cerebral Cortex in a Two-year-old Microcephalic Child and in a Forty-year-old Macrocephalic Idiot, by Dr. Theodor Kaes, of Hamburg; The Influence of Attentiveness on the Intensity of Perception, by Dr. Oswald Külpe, of Würzburg; New Data in the Anthropology of Criminals, by Dr. H. Kurella, of Brieg; A Definition of Truth, The Relations between the Cerebrum and the Genesis of our Conceptions, and When will Physio-psychological Studies become Science in the True Sense of the Word? by Professor Giulio Lazzarini, of Pavia; The Bodily Expressions of Psychical States, by Mr. Alfred Lehmann, of Copenhagen; Phobics, and On the Rôle of Psychotherapy in Establishments called Hydrotherapeutic, by Dr. Fernand Levillain, of Nice; The Present State of the Question of Criminal Suggestion, by Professor Jules Liégeois, of Nancy; The Conception of the Unknown in Psychology, and Æsthetic Impression and Optical Illusion, by Professor Theodor Lipps, of Munich; Criminal Imputability, by Professor Franz von Liszt, of Halle; On Morbid States of Passion Occurring in Paroxysms, by Dr. Leopold Löwenfeld, of Munich; On the Structure of the Brain, and On the Phenomena of Magnetism in the State of Hypnotism, by Dr. Jules Luys, of Paris; Trepography (Inverted Writing, Primary and Secondary Mirror-writing), by Dr. Ferdinand Maack, of Hamburg; On the Psychology of the Conception, by Professor Ernst Mach, of Vienna; On the Theory of Intermittent Stimulation of Sight, by Dr. Karl Marbe, of Bonn; The Influence of the Age of Parents on the Psychophysical Characteristics of their Children, and The Psychoses of Puberty, by Dr. Antonio Marro, of Turin; On the Influence of the Degree of Illumination on the Delicacy of Color Perception, by Professor Göt Martius, of Bonn; Speech and Abstraction, by Professor Anton Marty, of Prague; The Distinguishing Sense in Unicellular Organisms, and Psychophysical Laws in Neuropathology, by Dr. M. Mendelssohn, of St. Petersburg; Psychology and the Soul, by Dr. J. B. Meyer, of Bonn; On a New Malformation of the Central Mervous System, by Professor Constantin von Monakow, of Zürich; On the Relations between Psychology and the Criminal Law, by Dr. Jules Morel, of Ghent; The Vascular Reflexes of Simple Perceptions, and Hallucinations and Disturbances of Perception and of Ideation, by Professor Enrico Morselli, of Genoa; On Suicide and its Relations to Alcoholism, by Dr. Franz Carl Müller, of Munich; On Certain Phenomena of Trance, and the Psychology of Genius, by Mr. Frederic W. H. Myers, of Cambridge, England; On Criminal Psychology, by Dr. Paul Näcke, of Hubertusburg; The Material Bases of Consciousness, by Professor H. Obersteiner, of Vienna; Instruction in Speech and Psychology, and The Origin of Defects in Writing, by Dr. Max Offner, of Aschaffenburg; The Cortical Motor Centres under the Influence of Suggestion during and after Hypnosis, by Mr. Henrik G. Petersen, of Boston, Massachusetts; On the Appreciation of Pain, and on Mental Images, by M. Jean Philippe, of Paris; The Psychology of the Child, Individuality in Handwriting, and Protoplasm as the Basis of the Life of the Soul, by Professor W. Preyer, of Wiesbaden; The Cerebral Cortex of Man, by Dr. Ernst Rehm, of Munich; Consciousness as the Soul, by Professor Johannes Rehmke, of Greifswald; The Abstraction of the Emotions, by Professor Ribot, of Paris; Fasting in Hysteria and Perversions of Nutrition, by Professor Charles Richet, of Paris; A Therapeutical and Statistical Study of Hysteria, by Dr. Ringier, of Zürich; The Mechanism of Sleep, and On Stereoscopic Sight and Color Perception, by Professor Ottomar Rosenbach, of Breslau; On the Problem of Suggestive Anæsthesia, by Dr. Falk-Schupp, of Bad Soden; Perception, by Dr. H. Schwarz, of Halle; Doubts and Experimental Observations on the Time of Reaction, and Where is the Seat of the Emotions? by Professor Giuseppe Sergi, of Rome; Experiments in Involuntary Whispering and their Bearing on Alleged Cases of Thought Transference, by Professor Henry Sidgwick, of Cambridge, England; On a Statistical Inquiry into Hallucinations, by Mrs. Sidgwick, of Cambridge, England; Sensibility and Personality, by Dr. Paul Sollier, of Paris; A Graphic Method of Thought-reading, by Professor Robert Sommer, of Giessen; Psychology in the Schools, by Dr. Arthur Sperling, of Berlin; On the Treatment of Imaginary Diseases, by Dr. Heinrich Stadelmann, of Saal; The Psychology of Association, by Professor Ludwig Stein, of Bern; On the Appreciation of Gradual Changes, by Dr. L. William Stern, of Berlin; Unanalyzed Individuality as a Dominant Category in Savage Thought, by Mr. G. H. Stout, of Cambridge, England; On the Pathology of the Memory, by Professor Adolf von Strümpell, of Erlangen; The Synthetic Function, by Professor Carl Stumpf, of Berlin; The Value of Hypnotism in Chronic Alcoholism, by Dr. Lloyd Tuckey, of London; Metaphysical and Psychological Expositions of the Sciences, by Professor Goswin Uphues, of Halle; Experimental Researches on the Recollection of Lines, by Signor Nicolas Vaschide, of Paris (in collaboration with Signor Ferrari); Hypnotic Experiments as Psychological Methods, and On the Psycho-physiology of Dissociation Conditions, with Special Reference to Hypnotic Phenomena, by Dr. O. Vogt, of Alexandersbad; The Direct Suggestive Affection of Connective Tissue and Muscular Tissue, and its Significance in Ophthalmology, by Dr. Hermann von Voigt, of Leipsic; The Treatment of Certain Forms of Mental Alienation by Hypnotic Suggestion, by Dr. Auguste Voisin, of Paris; Studies in Color Perception, with Special Reference to Defective Color Vision, and The Psychical Unit as Suggested by the Study of Emotion and Sensation Associations, by Dr. William S. Wadsworth, of Philadelphia; Individuality and Personality, by Mr. C. Staniland Wake, of Chicago; A Contribution to the Study of Central Innervation, by Professor W. Wedensky, of St. Petersburg; On Sleep Prolonged Artificially, especially in the Treatment of Hysteria, by Dr. Otto Wetterstrand, of Stockholm; Ethics and Race Psychology, by Dr. Edward Westermarck, of Helsingfors; On the Relation between Irradiation and Simultaneous Contrast, by Dr. Gustav Wolff, of Würzburg; The Coming Problems of Experimental Psychology, by Professor Wilhelm Wundt, of Leipsic; and The Measurement of Association Speed, by Professor Theodor Ziehen, of Jena.

In addition, the following-named persons are expected to take part in the congress: Professor Mark Baldwin, of Princeton, New Jersey; Dr. Bertand, of Lyons; Professor Henry H. Donaldson, of Chicago; Professor August Forel, of Zürich; Dr. Sigmund Freud, of Vienna; Dr. Alfred Goldscheider, of Berlin; Dr. Gley, of Paris; Professor Grashey, of Munich; Dr. Hannequin, of Lyons; Professor Gerard Heymans, of

Groningen; Professor Freiherr von Krafft-Ebing, of Vienna; Professor Ladame, of Geneva; Dr. Henry Lemesle, of Paris; Dr. Arthur Leppmann, of Berlin; Dr. Felice Maltese, of Vittoria, Italy; Dr. E. Neumann, of Leipsic; Professor G. E. Müller, of Göttingen; Professor Hugo Münsterberg, of Freiburg; M. de Rochas, of Paris; Professor James Sully, of London; and Professor Edward Bradford Titchener, of Ithaca, New York.

The congress will be opened in the great aula of the Royal University, in the presence of Prince (Dr.) Ludwig Ferdinand of Bavaria. The American members of the international organization committee are Professor Baldwin, of Princeton; Professor Donaldson, of Chicago; Professor Fullerton, Professor Witmer, and Dr. Newbold, of Philadelphia; Professor Hall, of Worcester; and Professor James, of Cambridge.

The Oeynhausen Spa.—Dr. Karl Oetker, one of the physicians of the Bad Oeynhausen, in Westphalia, has been kind enough to send us a copy of a pamphlet entitled *Oeynhausen und seine Indicationen*, made up of contributions from various members of the medical staff of the establishment, and constituting the "Festschrift" incidental to a jubilee held to celebrate the fiftieth anniversary of the opening of the bath. As compared with many publications in balneology, these writings seem to us quite free from a tendency to overestimate the value of the particular waters under discussion, and, if it is true that "good wine needs no bush," that very fact should go far toward warranting the belief that Oeynhausen deserves to be more widely known than it is. Among the morbid conditions mentioned as susceptible of cure or mitigation by the waters are scrofula, rhachitic laryngismus stridulus, tuberculous affections of the bones and joints, anæmia and blood dyscrasiæ, hysteria, chorea, gout, chronic malarial poisoning, diabetes mellitus, diabetes insipidus, corpulence, syphilis, chronic lead and mercurial poisoning, chronic pelvic exudates, chronic oophoritis, chronic metritis, uterine subinvolution, benign neoplasms of the uterus and its annexa, amenorrhœa, dysmenorrhœa, sterility, cervical and vaginal catarrh, the tendency to abortion, muscular and articular rheumatism, gonorrhœal rheumatism, arthritis deformans, chronic affections of the heart, the relics of old pleurisies, incipient pulmonary disease, typhlitis, perityphlitis, various sequelæ of wounds and other injuries, apoplectic paralyses, embolic and thrombotic paralyses, spinal meningitis, myelitis, multiple sclerosis of the spinal cord, gliosis, myelosyringosis, poliomyelitis anterior, multiple neuritis, and a multitude of functional nervous disorders, especially neurasthenia. The physicians are Dr. Cohn, Dr. Huchzermeyer, Dr. Koch, Dr. Lehmann, Dr. Lehmann, Jr., Dr. Oetker, Dr. Reckmann, Dr. Rinteln, Dr. Rohden, Dr. Sauerwald, and Dr. Voigt. Oeynhausen is on the Hannover-Hamm-Cologne Railway, also on the Löhne-Vienenburg Railway.

The Massachusetts Medical Society.—The one hundred and fifteenth annual meeting will be held in Boston, on June 9th and 10th, under the presidency of Dr. Frank K. Paddock, of Pittsfield. The programme includes the following papers: The Shattuck Lecture (The Surgery of Typhoid Fever), by Dr. W. W. Keen, of Philadelphia; Diphtheria Antitoxine, by Dr. J. H. McCollom, of Boston; The Treatment of Diseases other than Diphtheria by Antitoxines, by Dr. Henry Jackson, of Boston; Internal Secretion of Glands, by Dr. W. T. Porter, of Boston; The Clinical Use of the Preparations from the Thyreoid Pituitary Body, the Suprarenal Capsules, and Bone Marrow, by Dr. R. C. Cabot, of Boston; The Operative Treatment of Congenital Dislocation of the Hip, by Dr. E. H. Bradford, of Boston; Excision and Erasion of the Knee—Results, by Dr. H. W. Cushing, of Boston; The Ultimate Results of Excision of the Hip, by Dr. R. W. Lovett, of Boston; The Treatment of Lateral Curvature of the Spine, by Dr. E. G. Brackett, of Boston; The Measurements in Lateral Curvature of the Spine, by Dr. G. W. Fitz, of Cambridge; The Operative Treatment of Infantile Paralysis, by Dr. J. E. Goldthwait, of Boston; The Treatment of Clubfoot, by Dr. Augustus Thorndyke, of Boston; The Pathology of Bone, by Dr. E. H. Nichols, of Boston; The Operative Treatment of Caries of the Ankle, by Dr. C. L. Scudder, of Boston; The Surgical Treatment of Spastic Paralysis, by Dr. W. N. Bullard, of Boston; The Treatment of Cold Abscesses, by Dr. Homer Gage, of Worcester; The Diagnosis of Hip Disease, by Dr. E. G. G. Brackett, of Boston; The Diagnosis of Pott's Disease, by Dr. R. W. Lovett, of Boston; The Treatment of Flat-foot, by Dr. J. S. Stone, of Boston; The Methods of Treatment and Progress in Orthopædic Surgery, by Dr. E. H. Bradford, of Boston; The Pulmonary Invalid in Colorado, by Dr. C. E. Edson, of Roxbury; The Treatment of Phthisis in Sanataria near our Homes, by Dr. V. Y. Bowditch, of Boston; The Treatment of Tuberculosis by the Injection of Tuberculin and its Derivatives, by Dr. Alfred Worcester, of Waltham; The Nucleins and the Nucleo-proteids in their Relation to Internal Secretion, by Professor R. H. Chittenden, of New Haven; Extra-uterine Pregnancy from the Standpoint of the General Practitioner, by Dr. E. S. Boland, of South Boston; and Ectopic Gestation, by Dr. M. H. Richardson, of Boston.

The Medical Treatment of Mechanical Insufficiency of the Stomach.—In the *Progrès médical* for April 25th M. Paul Cornet remarks that Boas considers the medical treatment to be purely symptomatic and the internal treatment generally palliative, and, on account of the difficulties it presents, it requires a great deal of caution in its employment.

In cases of grave symptomatology, notably in those of acute pain and vomiting, the patient may be nourished exclusively by the rectum for one or two weeks if he is strong enough to bear the treatment. Rossler and Boas obtained excellent results with this method, particularly in two cases of gastric dilatation following ulcer.

In regard to a special diet, says M. Cornet, skim-milk is especially recommended, and its digestibility may be increased by the addition of a small quantity of brandy. Tea and coffee may be given in small quantities, also beef tea and port wine. Mineral waters should be forbidden. When there is intense thirst, small pieces of ice may be allowed, also iced milk, coffee, or tea. Eight grains of Dover's powder may also be prescribed. Nutritive enemata consisting of eggs, peptones, bouillon, and red wine have been recommended for gastric insufficiency of the first degree, and they may be administered two or three times a day. Smoked and salt meats are preferable to fresh and juicy meats, and fruits and vegetables which contain much water should be avoided. Bread should be eaten toasted. Butter and cocoa may be recommended in small quantities.

Lavage of the stomach is considered by M. Cornet to be a valuable aid, especially if there is excessive stagnation of the alimentary residue. This treatment is employed preferably in the morning, although where there are great pain and nausea it should be done at night, and in serious cases both night and morning. The more rapid the amelioration obtained by lavage, the more favorable will the prognosis of the disease be. This treatment gives satisfactory results, especially in cicatricial stenosis and in atonic dilatation. Electricity and massage are indicated, says M. Cornet, and hydrotherapy may also be favorably employed.

With regard to the medicinal treatment, he says, there are two things to be accomplished: 1. To excite the power of action. 2. To diminish the process of fermentation. For the first, preparations containing strychnine, notably the extract of nux vomica, are indicated. The following prescription, says M. Cornet, is excellent:

℞ Codeine phosphate, Extract of nux vomica, each . . . 0·5 of a grain:
Bismuth salicylate . . . . . 8 grains.
M.

Divide into twenty capsules, three of which are to be taken every day, one after each meal. Subcutaneous injections of strychnine salicylate may also be prescribed.

In order to combat the process of fermentation, says M. Cornet, Kuhn preferred salicylic acid, sodium salicylate, and sodium benzoate. Hydrochloric acid is useful in excessive butyric and lactic fermentation. Naunyn prescribed the following:

℞ Carbolic acid . . . . . 38 grains;
Powdered marshmallow . . . . . q. s.
M.

Divide into twenty-five pills, three of which may be taken every day.

Ewald recommends the following mixture:

℞ Resorcin, resublimed . . . . . 75 grains;
Bismuth salicylate, Powdered rhubarb, Sodium sulphate, each . . . . . 150 "
Sugar of milk . . . . . 225 "
M. A pinch to be taken twice a day.

Resorcin is recommended also by Menche under the following form:

℞ Resorcin, resublimed . . . . . 30 grains;
Tincture of rhubarb . . . . . 75 "
Syrup . . . . . 300 "
Distilled water . . . . . 5·5 ounces.
M. The dose is a dessertspoonful twice a day.

According to Boas, resorcin may be given as follows:

℞ Resorcin, resublimed . . . . . 30 grains;
Saturated chloroform water . . . . . 4·5 ounces.
M. A dessertspoonful is to be taken three times a day.

From three to five drops of chloroform with a little ice is also recommended, or menthol may be given in the following manner:

℞ Menthol . . . . . 15 grains;
Alcohol, Syrup, each . . . . . 300 "
M. A teaspoonful of this mixture is to be taken every hour.

Loss of appetite may be combated with the fluid extract of condurango, pure or combined with fluid extract of calumba, or creosote, or the extract of nux vomica.

For insomnia due to other causes than pain, sulphonal, chloral hydrate, or chloral formamidate may be employed.

The latter may be given as follows:

℞ Chloral formamidate, Tincture of ginger, each . . . . . 150 grains;
Distilled peppermint water . . . . . 5 ounces.
M. The dose is a dessertspoonful taken at night.

With regard to constipation, says M. Cornet, no laxative is required, simply enemata consisting of soap and water with castor oil or glycerin. In all cases drastics, and especially saline purgatives, should be avoided. Boas, he says, in cases where it is absolutely necessary to use medicaments, gives the fluid extract of cascara sagrada in doses of a teaspoonful three times a day.

The New York Academy of Medicine.—At the last stated meeting, on Thursday evening, the 21st inst., the following papers were read: The Statistics of Diphtheria, by Dr. G. G. Coakley; Clinical Observations on the Antitoxine Treatment of Diphtheria, and a Report of Personal Investigation of this Treatment in the Principal Fever Hospitals of Europe during the Summer of 1895, by Dr. Joseph E. Winters; Experiences with the Antitoxine Treatment, by Dr. P. H. Ernst; and Diphtheria with and without Antitoxine, by Dr. W. L. Stowell.

At the next meeting of the Section in Laryngology, on Wednesday evening, the 27th inst., a paper entitled Some Remarks on Nasal Obstruction will be read by Dr. J. B. Wright, and one on The Constitutional and Local Causes of Nasal Hæmorrhage and the Methods of Controlling it will be read by Dr. C. C. Rice. Dr. H. B. Douglass will show a patient with primary carcinoma of the inferior turbinate, and there will be an exhibition of new instruments.

At the next meeting of the Section in Obstetrics, on Friday evening, the 29th inst., papers on The Modern Treatment of Eclampsia will be read (medical, by Dr. S. Marx, and surgical, by Dr. E. H. Grandin). Cases will be reported, and specimens and instruments exhibited.

The Medicinal Use of Orexine.—Dr. Hohn, of Wiesbaden (*Therap. Mntshft.*, January, 1896; *Wiener klin. Woch.*, April 30, 1896), remarks that the chloride of orexine should always be given in wafers, but that the uncombined alkaloid may subsequently be administered without the use of wafers, when one has made sure that it does not give rise to a sense of burning in the mouth or the œsophagus. Not more than four grains should be given at one dose, and the entire amount given in the course of twenty-four hours should not exceed eight grains. A dose should be taken half an hour before the midday meal, and perhaps another shortly before the evening meal. The author has used orexine in thirty-three cases, and gives the histories of ten, including three of anæmia, one of gastric catarrh, one of sequelæ (loss of appetite, pallor, debility, etc.) of catarrh of the large intestine of several weeks' duration, two of supposed incipient tuberculous pulmonary disease, one of such disease positively recognized, and two of excessive vomiting of pregnancy. In twenty-three other cases there was loss of appetite caused by anæmia in eight, gastric catarrh in six, and vomiting of pregnancy in one, and attendant upon convalescence in three. As regards the results, in five of the thirty-three cases they are not stated; in nine success was attained, according to the patients' accounts; in twelve, increase of the appetite was noted; in four, the result was doubtful; and in two, failure occurred (one was that of a phthisical patient in the last stage of the disease, and the other was that of an hysterical woman).

Bellevue Hospital Medical College.—In consideration of his long-continued connection with the college, for more than twenty years, Dr. J. Lewis Smith has been appointed emeritus professor of diseases of children. Dr. George D. Stewart has been made adjunct professor of anatomy. Dr. William P. Northrup has been appointed professor of pædiatrics.

The New York Celtic Medical Society.—The regular monthly meeting will be held on Thursday, the 28th inst. The order for the evening includes a paper on Cystic Degeneration of the Chorion, by Dr. George McGauran, scientific communications, presentations of instruments and specimens, and exhibitions of patients.

Lectures and Addresses.

A FAMILY FORM OF IDIOCY,

GENERALLY FATAL, AND ASSOCIATED WITH EARLY BLINDNESS (AMAUROTIC FAMILY IDIOCY).

BEING PART OF A PRESIDENTIAL ADDRESS DELIVERED BEFORE THE NEW YORK NEUROLOGICAL SOCIETY, *May 5, 1896.*

BY B. SACHS, M. D.,

PROFESSOR OF NERVOUS AND MENTAL DISEASES IN THE NEW YORK POLYCLINIC, ETC.

IN July, 1887, at a meeting of the American Neurological Association, I described, under the title of Arrested Cerebral Development, with Special Reference to its Cortical Pathology,* the clinical history and the morbid changes in the brain of a child that appeared to be normal at birth, that began to develop mentally and physically in the usual manner, until at about the age of three months cessation in its mental progress was noticed. The limbs became weak, then paralyzed; vision grew dim, and after a while was totally lost. By degrees this child passed into a condition of marasmus, and died at the age of two years. At first the case appeared to be an isolated instance of a fatal form of idiocy, associated with amaurosis; the family character of the affection was not recognized and could not then have dawned upon me. Four years later another similar case † occurred in this same family. This second child passed through exactly the same conditions, and at death its brain presented changes identical with those found in the brain of the first child. The occurrence of this same disease in two children of one family was an unusual one, to say the least; but it might well have been a mere coincidence. During the past few years the importance of this disease as a family affection has grown upon me. In various writings published both here and abroad, notably in a lecture in the Volkmann series, ‡ and in my book on *The Nervous Diseases of Children*,# attention was directed to this special form of idiocy, but to my knowledge the subject has not to this day at tracted the attention of neurologists.

In August, 1891, a child of thirteen months was brought to my department at the Polyclinic. This child came of healthy parents, and had been developed normally up to the age of six months; at that age the parents noticed a cessation, or rather a retrogression, in its mental and physical development. When first examined the condition consisted of a marked idiocy, spastic paraplegia, visual defect amounting to a mere perception of light, and a decided tendency to marasmus. The mother had reared this child with special care, as she recognized the resemblance between the symptoms of this child and those of three others who appeared entirely normal up to the age of five or six months. These exhibited mental defect and blindness, and all three died before the age of two years.

My attention was also directed to this form by the following experiences: We have at present in the Montefiore Home a child of four years (Koller's first case) that is completely idiotic and absolutely blind. The only history that could be elicited was that the disease had developed early in childhood, and that blindness was one of the first symptoms. I suspected the condition might be the result of a meningitis in the first years of life, but there was no history of such an acute disease, and for a long time it was puzzling to know in which category to place this case; nor did I suspect its true nature until I had the privilege of seeing the sister of this child, whom Dr. Koller presented at another society as an instance of an unusual form of early or congenital blindness.

The ocular manifestations of the disease have been well described by a number of ophthalmologists. At least I hope to prove that the rare condition noticed by the oculists constitutes an integral symptom of the disease in question. Through the courtesy of Dr. Knapp, I have had access to the ophthalmological literature on the subject with which I had remained unfamiliar until long after my first article on the subject had appeared. In 1881, Warren Tay described (in the *Transactions of the Ophthalmological Society of the United Kingdom*, vol. i) a case presenting "symmetrical changes in the region of the yellow spot in each eye of an infant." Briefly, the case was this:

An infant, aged twelve months. Child was deficient in holding up its head or in moving its limbs. There was weakness, but no absolute paralysis of any part. Its cerebral development was probably deficient. At the first examination, March 7, 1881, the optic discs were apparently healthy, but in the region of the yellow spot of each eye there was a "conspicuous, tolerably diffuse, large white spot, more or less circular in outline, and showing at its centre a brownish-red, fairly circular spot, contrasting strongly with the white patch surrounding it. This central spot did not look at all like a hæmorrhage, nor as if due to pigment, but seemed a gap in the white patch through which one saw healthy structures. In fact, the appearance may most suitably be compared with those we are familiar with in cases of the embolism of the central artery of the retina." The author adds that he can not arrive at any conclusion as to the exact nature of the disease. He believed the changes to be situated in the retina and possibly congenital. Five months later another examination was made, showing that the discs had become atrophic, but that the changes in the macula lutea were the same as before.

It is of some interest to note that this child was seen by Hughlings Jackson, who could only say that the "baby seemed very weak." In this same family, according to Warren Tay's later reports,* three similar cases had occurred, each one of the children presenting exactly the same ocular symptoms, and exhibiting the same physical condition, and all three dying before the age of two years.

The ocular condition attracted some notice, and cases of this character were described by Magnus, † Goldzieher, ‡

* *Journal of Nervous and Mental Disease*, 1887, p. 541.
† *Ibid.*, 1892, p. 603.
‡ *Die Hirnlähmungen der Kinder*, No. 46, 47, 1892, p. 467.
# Sachs. *The Nervous Diseases of Children*, 1895, p. 396.

* *Transactions of the Ophthalmological Society of the United Kingdom*, vol. iv, 1884.
† Magnus, in Zehender's *Klin. Monatsblätter*, 1885, vol. xxiii, p. 357.
‡ Goldzieher, in Hirschberg's *Centralblatt* 1885, p. 219.

Wadsworth,* of Boston, and Hirschberg,† of Berlin, between the years 1885 and 1887. In 1885 Knapp reported upon the ocular condition of the child which I had occasion to see after him; and a few years later E. C. Kingdon,‡ of Nottingham, published a case under the title of A Rare Fatal Disease of Infancy, with Symmetrical Changes at the Macula Lutea, and in this paper called attention to the resemblance between the cases observed by the oculists and those described by me. In 1894, Dr. Curtis B. Carter # reported upon a similar case and collected the cases that were then known. To the list of cases recorded in his article I am able to add another one published by Kingdon‖ only a year ago; the patient was a sister of the first child he described a few years previously.

So far as I am able to see at the present time, nineteen cases of this disease are known, and they are distributed about as follows:

Author or Observer.	Boys.	Girls.	Sex not stated.
Tay	3*	..	1*
Sachs and Knapp	..	2*	..
Koller	..	2*	..
Kingdon	1*	1*	..
Sachs	1*	3*	..
Carter	..	1	..
Magnus	..	1	..
Wadsworth	..	1	..
Goldzieher	..	..	1
Hirschberg	..	..	1
Summary	5	11	3

* The asterisks indicate that the children in the same line so marked belonged to one family.

Eight of these nineteen cases have been brought to my own notice, including those of the two children examined by Dr. Koller.

Let me give a few detailed histories of this rare disease:

My first patient, seen in the practice of Dr. I. Adler, was a little girl, the firstborn of young, healthy parents. The parents were not related to each other, but in the family of each mental derangement was not unknown. The mother sustained a slight accident during the fifth month of pregnancy, having been thrown out of her carriage, but no serious injury appeared to have been done. The child was born at full term, and was healthy in every respect. Its body and head were well proportioned, its features regular. The child was doing well apparently until at the age of two or three months, when the parents observed that it was much more listless than other children of the same age, that it took no notice of anything, and that its eyes rolled about curiously. There was evident nystagmus. The child would ordinarily lie upon its back and was not able to change its position spontaneously. It was neither able to hold its head straight nor to sit upright. It never attempted any voluntary movements. All the muscles in this case were flaccid, but all reacted perfectly to both forms of current. The child would close its hand upon the finger of the examining persons, but objects placed in its hands were quickly dropped. As it grew older it gave no signs of increasing mental vigor. It could not be made to play with any toy, did not recognize people's voices, and showed no preference for any person around it. During the first year of its life the child was attracted by the light and would move its eyes, following objects thrown across its field of vision, but later on absolute blindness set in.

In his first report to the Ophthalmological Society at Heidelberg, Dr. Knapp had dilated upon this child's condition as he found it at the age of two to three months; his findings included "nystagmus vibratorius; pupils contracted, as is usual with children at this age; fovea centralis of a cherry-red color, surrounded by an intense grayish-white opacity. This opacity was most distinct in the vicinity of the fovea centralis and for some little distance around it, but faded away gradually into normal retinal field." At a later examination of this same child in June, 1886, Dr. Knapp found that the child was totally blind, optic nerves completely atrophied, discs as white as paper, with scarcely a trace of blood-vessels (from discs to blood-vessels); macula lutea essentially as before."

This child's hearing was very acute; there was marked hyperexcitability to auditory and tactile impressions; the slightest touch and every sound were sufficient to startle the child. It never had convulsions, nor did it exhibit any marked rigidities at any time. Otherwise the bodily functions were normal, excepting the frequent occurrence of bronchial troubles and feebleness of digestion, which made the proper feeding of the child a very delicate matter. The child passed through a severe attack of diphtheria at the age of one year, from which it rallied in the course of a few weeks. It may also be stated that this infant presented no evidences either of inherited or acquired syphilis and none of rhachitis. During the summer of 1886 the child grew steadily weaker, ceased to take its food properly, and finally it died in August of that year.

In the same family to which this first child belonged a healthy boy was born who has now developed into a bright and vigorous child, but a third child of this same family, whom I had occasion to see (first in consultation with Dr. Jones and later with Dr. Kimball), presented exactly the same symptoms as the first, and by way of anticipation I may state that the morbid findings were exactly the same in the brains of both children. I quote from my report in 1892 of this second patient: "The experience with the first child led the parents to exercise unusual care in raising this infant, which was born at full term and was of entirely normal physical development. It was given the bottle at first, later it was nursed at the breast. It did fairly well and appeared to be as far advanced as any other child until the age of eight months. Since that time there has been retrogression (the child was examined by me first at the age of thirteen months). On closer inspection it was found that the child could not hold up its head or sit up unless supported. It had no perception of light; the pupillary light reflex was entirely gone. It had slight sense of hearing, but could not distinguish between sounds. There was a slight spastic condition of the upper and lower extremities. No spontaneous movement of any sort. The knee-jerks of both sides were distinctly exaggerated, but no ankle-clonus was obtained. The plantar reflexes were also increased. At this time one tooth was breaking through and the fontanelle was not entirely closed. I entered upon my notes at the time: "The resemblance to first child very close

* Wadsworth, *Transactions of the American Ophthalmological Society*, 1887, vol. iv.

† Hirschberg, in his *Centralblatt*, 1888.

‡ *Ophthalmological Society Transactions*, vol. xii.

Knapp's *Archives of Ophthalmology and Otology*, January–April, 1894, p. 126.

‖ *Transactions of the Ophthalmological Society*, etc., vol. xiv, p. 126, 1895.

in every respect except that the paresis is more spastic in character than in its sister." Six months later I saw the child again, but at this time sight and hearing were completely lost; the mind was a blank. The child grew weaker and weaker, and at the age of twenty months (four months earlier than the first child) it died in a condition of extreme marasmus. A week before its death it had considerable fever and severe convulsive seizures, but these were the only ones that had occurred during the entire course of the disease.

In August, 1891, a woman brought to my clinic her boy, R. H., aged thirteen months. This was her tenth child, five children having died. Of these, three girls were exactly like the child brought to me, and all died before the age of two years, of general marasmus. The mother had had no miscarriages, and there was no reason to suspect either syphilis or any neurotic taint. She was an exceptionally healthy woman, and all her children were born after easy confinements. The child in question was said to have weighed twelve pounds at birth, was nursed at the breast, and did well until six or seven months old; then it began to droop its head, and since the age of seven months had been steadily deteriorating both mentally and physically. When examined at the age of thirteen months the fontanelles were still open, the head was moderate in size, there was a slight spastic condition of both legs, and the child was unable either to sit up, stand, or walk. It had only the merest perception of light, but was excessively startled by every sound. The eyes diverged, but there was no nystagmus; it had occasional slight spasms, but no complete convulsive seizures.

The other patients observed by me presented entirely similar symptoms, so that it is unnecessary to go into further details. But it will not be amiss to quote in this connection the chief features of several other cases, as I am particularly anxious to bring out the resemblance between those observed by ophthalmologists and those described by myself.

Dr. Carter reported upon the condition of a little girl aged nineteen months, seen in December, 1893. The patient was healthy up to the third month; since then a gradually increasing general weakness without paralysis. Child is apathetic, hearing good, eyes externally normal, mobility and pupillary reflexes normal; eyes do not follow light. The ophthalmoscopic examination showed both discs pale, sharply outlined; retinal vessels normal. At the macula lutea of both eyes were found changes resembling those following embolism—a cherry-red spot, sharply defined, surrounded by a grayish-white halo, the latter not sharply outlined, a little larger than the disc and apparently horizontally oval in form. Parents are second cousins; both previously healthy; no specific history. The discs of both eyes had undergone total atrophy. The child died January 21, 1894, at the age of twenty-one months.

Dr. Kingdon's patient deserves special attention, as it is the only other case in addition to my own in which a post-mortem examination was made. The history was in substance as follows:

A boy, aged eight months, the son of Jewish parents, was admitted to the Children's Hospital, Nottingham, June 26, 1891, having been brought to the hospital on account of general and increasing weakness of the back and limbs. The patient was born at full term and was then well nourished. Until the third month he appeared to be about as strong as other children of that age; cut incisor tooth at seventh month; no convulsions. From the age of three months onward there has been increasing impairment of power in the muscles of the trunk and limbs; inability to hold up the head was the most obvious symptom. In July, 1891, child weighed seventeen pounds and a half; height, twenty-six inches and a half; even features; good complexion. There were no external congenital defects. A thick layer of fat covered the body; muscles flabby. The child lay quietly in bed, was apathetic, rarely cried, not even for food, occasionally laughing without obvious cause. The mouth was generally open and the face bore an expression of mental enfeeblement. Patellar reflexes were present; there was no reaction of degeneration. Hearing was acute; he was very sensitive to sudden noises which made him visibly jump. (In all these features this patient bears a remarkable resemblance to my [S.'s] first case.)

The author's report continues: The child pays little attention to objects held before it, though it can see them. The pupils are equal, five millimetres in diameter, and react readily to light; media clear; optic discs pale, yellowish-white color; but few small vessels visible in it; retinal arteries are diminished to rather more than one third of the diameter of the veins; no venous engorgement; no hæmorrhages. At the yellow spot, covering a space nearly twice the size of the optic papilla, is a whitish-gray patch, somewhat oval in shape (the axis being horizontal), with softened edges; a few retinal vessels are visible on it at the periphery. In the centre of the patch the fovea centralis is of a dark cherry-red color, reminding one of the appearances seen in retinal embolism. The alterations are identical in the two eyes.

The further history of this case is the recital of a gradual mental and physical deterioration; the child grew blind, and ophthalmoscopically there was no alteration in the appearance of the macula, but the optic discs grew paler. The child died at the age of twelve months.

In this family a boy born six years previously was well developed at birth, but subsequently became weak and apathetic; he wasted and died when two years of age. Whether he was blind is not stated. The second child (five years and a half old at the time of Kingdon's report) is healthy. The third child was the one upon whose history we have dilated, and the fourth child, born about one year and a half after this one, was afflicted with the same disease, according to Kingdon's latest report.

Dr. Koller has been good enough to furnish me with brief notes of the two children he has observed. His notes read:

On June 18, 1894, Mary L., then two years old, was brought to me for examination by her mother. When the child was three months old, it was noticed that she did not use her eyes as other children of that age do. There was lateral nystagmus present, which, according to the history given, had been developed in the first few months of the child's life. The ophthalmoscopic examination, difficult on account of the floating image, showed the discs to be in a congested state; besides, I find in my record the entry that apparently there is perception of light. I did not see the child again until two years later, when an almost identical condition in an infant sister came under my observation, excited my interest, and caused me to re-examine the first child. The general condition of muscular debility and dementia had meanwhile been developed as described by Dr. Sachs. At this examination I entered: Apparently perception of light,

as child turns toward gas flame. Lateral nystagmus, not constant. Pupils of medium width, sluggish contraction to light (turning toward window); no prompt reaction. Both discs yellowish, discolored, present the condition of atrophy as observed in retinitis pigmentosa. Veins dilated, arteries thinner. Dilated condition of veins may be due to screaming and struggling of the child.

A more recent examination by Dr. Koller revealed the following condition:

Discs atrophic; yellowish discoloration similar to appearances in retinitis pigmentosa. Retina atrophic; very thin chorioidal vessels visible through retina. In the region of the yellow spot a slight veil-like milky-blue opacity, gradually fading into the surrounding retina. In the centre of this opacity, at the site of the fovea centralis, a cherry-red patch, not very dark, a little smaller than the papilla, with ill-defined outlines.

On January 8, 1896, the infant sister, Hattie L., was presented for examination. The child was two months old, had lateral nystagmus. The mother thought the child was blind, but agreed with me that perception of light was present. The pupils, of medium width, became slowly narrower when exposed to strong light.

The ophthalmoscopic examination of the eyes of this second child is not yet complete.

Dr. Koller has made repeated and careful examinations of the children's eyes, and authorizes me to state that the condition of the fundus is entirely analogous to that described by Tay, Knapp, and others. Dr. Koller intends to publish these two cases in full shortly.

Taking all these histories into account as they have been reported by a number of different observers, there can be no doubt that the cases described by the oculists are identical with those seen by me, and that they constitute a very definite family affection. The chief symptoms of this affection are—

1. Mental impairment, observed during the first few months of life, and leading to absolute idiocy.

2. A paresis or paralysis of the greater part of the body, and this paralysis may be either flaccid or spastic.

3. The reflexes may be deficient or increased.

4. A diminution of vision, terminating in absolute blindness (changes in the macula lutea, and later an optic-nerve atrophy).

5. Marasmus and a fatal termination, as a rule, about the age of two years.

6. The occurrence of the affection in several members of the same family.

As symptoms observed in some but not in all of the cases, we may add nystagmus, strabismus, and hyperacuity of hearing. Variations will naturally occur in different cases and at different stages of the disease. In some instances there may be a marked form of imbecility instead of idiocy; in some the paralysis will be very much more complete than in others, and the rigidities and contractures will naturally vary also according to the period at which the child is examined, the intensity of the morbid process, and the part of the brain most directly involved.

The changes in the macula lutea are so striking that they constitute a most valuable sign of the disease. Of the nineteen cases here reported, the same ophthalmoscopic appearances have been noted in fourteen, in four the eyes were not examined, and in one (a case of Koller's) the report is not final.

But no one symptom, however constant, is of such importance that we are warranted in ruling out the disease if all other signs are present and this one is wanting. Even normal light reflex does not preclude tabes if all other cardinal symptoms are present. Furthermore, it is well to remember that the cases in which the examination has been reported have been those in which the oculists have been specially consulted. May not also a different developmental defect of the retina or of some other ocular structure be conceivable in this same group of cases? For this reason it is important that both neurologists and ophthalmologists should watch and study this special disease.

That all these symptoms are due to defective cerebral development, together with disease of the retina, might have been inferred from the symptoms. Fortunately, it has been possible to determine somewhat accurately the morbid changes underlying this disease. Autopsies were made in two of my own cases, and several years later by Kingdon in the first case which he described. As the latter author emphasizes the correctness of my own findings, it will be best to give a short statement of the result of the autopsies in my own cases.

These two autopsies were performed on the children of the first family in whom I had occasion to see the disease. In the first child the skull was thick, and the skullcap unusually heavy; the outer and inner surfaces were smooth and showed no unusual impressions. The skull was symmetrical, the left frontal fossa a trifle deeper than the right. Each fontanelle was very nearly ossified (at the age of two years). A large clot was found in the superior longitudinal sinus. There were some slight adhesions over the upper portion of the precentral and the left temporal convolution, but the pia could be removed easily from every part of the hemispheres without injuring the cortical tissue. There was unusual pallor of the convolutions and œdema of the entire convexity, but no marked increase of fluid in the lateral ventricles. Freed of its dura, the brain weighed exactly two pounds. The blood-vessels appeared normal, and were normal in distribution. On superficial inspection a great breadth of the fissures with a corresponding narrowness of the convolutions and the unusual exposure of the left island of Reil were very apparent. At the time of the first report upon this brain* I gave a rather detailed description, to which I now refer, of the abnormities of fissuration, such as the confluence of the central fissure with the fissure of Sylvius and the unusual prolongation of the first temporal. Under the influence of the teachings of Wilder and Mills these features were described rather minutely, but to-day it is sufficient to state that the abnormities of fissuration revealed changes which are generally associated with brains of low development. The most important changes were those found on microscopical examination of sections taken from the frontal

* *Journal of Nervous and Mental Disease*, 1887.

lobes, from the motor area, from the base of the third frontal convolution, from the first temporal, and from part of the occipital apex of each hemisphere. The changes to be described were found in every part of the brain examined. It is a special satisfaction to me to know that these specimens were examined and the drawings made by Dr. Van Gieson, and that he corroborated the following findings:

In the sections it was possible to distinguish the external barren layer, the layer of small pyramidal cells, the layer of the large pyramids, and perhaps a trace of Meynert's fourth layer. In a thorough search of hundreds of sections there were not more than half a dozen, if as many, pyramid cells of anything like normal appearance. The fewest cells showed well-defined processes. The contours were rounded, and the cell substance exhibited every possible change of its protoplasmodic substance. In some cells there were a distinct nucleus and nucleolus surrounded by a detrituslike mass. In many the nucleus and nucleolus were wanting entirely. These changes were determined by the acid-fuchsin method. In the neuroglia there were no evident changes, nor was there any distinct sclerosis in any part of the brain examined. In Weigert specimens it appeared to us that the white fibres could not be traced as far toward the periphery as in the normal cortex. There was no evidence whatever of any previous encephalitic process, no proliferation in the walls of the blood-vessels, and no infiltration of the tissues surrounding them. A careful count was made of the development of the blood-vessels, and there appeared to be no change in the number of them or in their calibre as compared with sections of other children's brains.

As a result of this examination we were able to conclude that the chief changes were restricted to the cells and possibly the white fibres, and there was every reason to believe that the absence of inflammatory changes with the abnormities of cell structure were due to an arrest of development. The condition as found in this first brain was defined as an agenesis corticalis, pure and simple.

A second autopsy, performed upon the sister of the first child four years later, revealed exactly the same order of changes, except that the abnormities of fissuration noted in the first case were not present here, but of this difference in the two findings we can not make much. In this second case careful sections were made of all parts of the cortex, of the ganglia, of the optic chiasm, of the pons, and of the medulla. No changes were found in any part of the brain except in the cortex, and these tallied altogether with those previously described. In some mysterious way the upper cervical and dorsal portions of the cord were unfortunately lost. The lower portion, that was carefully examined, revealed no changes in the gray matter, but there were large areas laterally including the pyramidal tract, and extending to the periphery, which were degenerated. It was very different in character and extent from an ordinary secondary degeneration. A section from the lower dorsal region exhibited changes in the pyramidal and cerebellar tracts, but I wish to be careful in interpreting these findings. The retinæ were not examined in either case, but the optic nerves of the second child were carefully examined and no changes were found by the methods then in vogue. The further examination of the other organs in my own cases convinced me of an important negative fact—viz., that there were no lesions that would lead one to suspect syphilis.

In the autopsy performed by Kingdon he states distinctly that there were marked changes in the pyramidal cells of the cortex, and he indorses the interpretation I have given to this as a result of arrested development, and not of any inflammatory process. Mr. Treacher Collins cut sections of the eyes, but the result was unsatisfactory, as there was a fold of the retina in each eye at the macular region. Sections of the second and third cervical segments of the cord were said to have revealed well-marked descending degeneration. Further investigations will have to be made to show whether this was an actual degeneration or a defect in development of the white strands—a question not easy to decide.

While it is some satisfaction to have had three autopsies in so rare a disease as this one, I am well aware that the records are incomplete. Above all, it is important that the eyes shall be thoroughly examined post mortem, and I have no doubt that with the newer methods now in vogue (it is four years since my last autopsy) a much more thoroughgoing study of the cell changes will be possible, and I also suspect that a more careful examination of the cord will reveal developmental defects in various tracts of the spinal cord.

The ætiology of this affection calls for a few remarks. The family predisposition is evident enough from the fact that the nineteen cases here reported belong to ten families, as many as four cases having been observed in one family.

Among the causes to which we might attribute the disease are a marked neurotic taint; a blood relationship between the parents; and traumatism of the mother during pregnancy—a fact which has been mentioned in several of the cases. Carter (*loc. cit.*) was the first to state that the disease has been observed altogether among Hebrews, and this is true, so far as I know, of all the cases except the four reported by Tay, and of these it may also be true; yet I can hardly believe that the disease is purely a racial one, for the changes are such as might readily occur under any conditions of life, and, moreover, cases have been reported closely allied to this form in other races. The absence of syphilis has been distinctly noted in six of the ten families. This is important, for we may be tolerably certain that if a single case of this class should be observed with a clear specific history, the author so reporting would proclaim this disorder a form of hereditary syphilis.

The course of the disease is a rapidly fatal one. All the cases reported upon have died before or at about the age of two years; the only exception to the rule is the child now in the Montefiore Home, yet I do not on that account hesitate to add it to the list of cases, for I think it is best not to draw the lines of any disease so closely that the variations in a single symptom or condition would take the case out of the given category where all the other symptoms would tend to place it. In this child just referred to the disease may have appeared in a somewhat limited form; the arrest of development may not be as complete as in the other children so affected. The fatal termination is the result of the condition of marasmus into which the child lapses, and this lowering of all the vegetative functions is, I believe, the result of the disturbances in the cerebral functions. In my first case, to be sure, there was also a very strong suspicion that there was mal-

development, or at least arrested development, of other organs of the body, for the gastric mucosa refused, from an early period, to perform its functions in anything like proper fashion.

Before determining the exact relation of this family form of idiocy to other hereditary and family affections, it may be well to note that the disease may be confounded with conditions due to inherited syphilis.

Thus, on June 7, 1894, Dr. A. R. Robinson asked me to see a child one year of age, which had been previously examined by Dr. Knapp, and which the latter suspected at the time might possibly belong to the category of cases which I had described. There was no trouble at the time of this child's birth, but the parents soon noticed that the eyes had an unnatural look. The parents were first cousins. The mother was a very nervous woman; the father had been seen by me in August, 1891, before his marriage, for headaches, which were probably of specific origin. A previous specific infection was admitted. On examination of the child I found that the horizontal circumference of the head was normal; the fontanelles were almost closed. The child was rather apathetic; seemed to move its left arm much more than the right; the right hand was slightly contractured. Both knee-jerks were much exaggerated, but there were no contractures. The ankle-clonus could be obtained on the right side, but not on the left. There was not the slightest sign of any mental development, the child passing its entire time in sleep unless it was startled by noises. Dr. Knapp was kind enough to give me an abstract of his notes, made May 25, 1894, in which he stated that there was nystagmus; corneæ were dull, irides discolored; pupils move, but do not sufficiently dilate under atropine; faint reflex from fundus. On June 15th he notes that the irides were swollen, corneæ dull, tension normal.

In view of the specific history of the father, and the especial findings of Dr. Knapp, this case does not belong to the category which we have described, and would have to be interpreted as a form of hereditary syphilis, although the psychic condition resembles very closely that of the children whose condition we have been studying.

With congenital idiocy of the ordinary type the disease which we are discussing might well be confounded, but the absence of visual symptoms and the proof of a normal fundus, and, above all, the fact that the subjects of the ordinary congenital idiocies live on for many years, will help to establish the differential diagnosis. The congenital idiocy with blindness bears a rather close resemblance to congenital spastic diplegias, and yet there are several points of difference. Freud* has included the first two cases of mine among the hereditary and family forms of cerebral diplegias, and has put them into the same category of cases described by Naef,† Gee,‡ Schultze,# and others, but it is well to note that the characteristic symptoms of cerebral diplegia were wanting in several of the cases described by others and by myself, and congenital blindness is surely a symptom which is not present in the ordinary cases of cerebral diplegia. I am confident, also, that if Freud had known of the association of special changes in the retina with this fatal form of idiocy, he would not have been so apt to classify my cases as he has done.

While the majority of cerebral diplegias are due to traumatism during labor, the hereditary and family diplegias are more likely to be due to defective development of a considerable portion of both motor tracts. From this point of view the family form of spastic diplegias may claim to be an allied disease. The relationship is brought out fairly well in the histories reported by Freud,* of two children of a physician who had married his own niece, eighteen years younger than himself.

The older of these two boys, aged six and half years at the time he was examined by Dr. Freud, was born after an easy labor; no convulsions. Did not notice light in the first months; the pupils did not react when examined with the ophthalmoscope. At three months nystagmus was observed. He learned to talk at the age of five years. Is not yet able, at six and a half years, to stand or walk alone. Latterly nystagmus with strabismus convergens, alternating according to the particular half of the retinal field engaged in the visual act has been observed. Dr. Koenigstein reported atrophy of the optic nerves, but expects a gradual improvement in vision; the reason for this is not stated. The child presented, in addition, moderate spastic rigidities with increase of the reflexes. The intelligence was said to be good.

The younger brother resembled the older one in most respects, except that he was bright up to the age of two years, and then developed nystagmus; speech became defective and the gait became spastic. In this boy, too, there was nystagmus with alternating strabismus convergens, and atrophy of the optic nerve.

The striking differences between these extreme cases and those related by me need not be insisted upon; but in this same family another child was born that lived but ten months; is said to have died of rickets, probably of marasmus, and was paralyzed, apathetic, and idiotic from birth on. No statement is made whether or not the child was blind. This third child resembled our patients much more closely, and in it the affection was evidently developed to an intense degree.

The congenital form of idiocy has other, even if remote, relations. In my text-book on *The Nervous Diseases of Children* I have referred to this disease in connection with hereditary spinal affections. We speak of Friedreich's ataxia, of the hereditary cerebellar ataxia, as spinal forms of hereditary disease; yet it is more than probable that a developmental defect in the entire central nervous system is responsible for the special symptoms in each of these diseases.

In our classifications we are still hampered by the attempt to classify hereditary diseases according to the involvement of the brain or of the spinal cord; but if we drop this narrow though important line of classification and if we substitute a broader one, including those forms in which there is a defective development of some part of the cerebral or cerebro-spinal system, we can not deny the relation between the form that we have been describing and the cases of Friedreich's disease, or cerebellar ataxia, or

* *Zur Kenntniss der cerebralen Diplegien*, etc. Vienna, 1893, p. 138.

† Naef. *Dissertation.* Zurich, 1885.

‡ Gee. *St. Bartholomew's Hospital Reports*, xxv.

Schultze. *Deutsche med. Wochenschr.*, 1889, p. 287.

* *Loc. cit.*, p. 143.

hereditary spastic paralysis, as they have been reported by Struempell,* Erb,† Pelizaeus,‡ and others. The difference in clinical symptoms is dependent after all upon the extent of developmental defect; whether that developmental defect be most marked in the brain or in the spinal cord, in the pyramidal tracts, in the posterior columns, or in the cerebellar strands, does not matter quite as much as one would at first sight suppose. The underlying causes leading to the development of these various forms of hereditary disease are still unknown, but the further study of all these forms may gradually lead to a better understanding of the ætiological factors. For the present a sharp clinical distinction, within lines that are not drawn too narrowly, is bound to be of value. The disease which I have described is characterized by such distinct clinical symptoms that it deserves special recognition.

This same affection may also have some interest as another and a special form of idiocy. A few years ago idiocy was a mere generic term for a number of diseases poorly differentiated from one another; but we now recognize, among others, not only those forms of idiocy which are associated with early epilepsy and with infantile cerebral palsies, but we also recognize a special form associated with cretinoid or myxœdematous conditions. The study of this congenital form of idiocy with blindness will add, we trust, still further interest to a class of cases that have received far less attention than they deserve. It would be desirable to designate this special form of idiocy in accordance with the pathological findings. Agenesis corticalis would seem to be a fitting term, but if we were to adopt this we might hamper the further studies of the morbid lesions underlying this disease. It will be better, therefore, to find a clinical designation, and I would propose the name *amaurotic family idiocy.*

Original Communications.

HYPNOTISM AS A THERAPEUTIC AGENT.#

By LOUIS LICHTSCHEIN, M.D.

I SHALL not weary you with the history of hypnotism; it is well known. Nor shall I go into the theory of hypnotism, except to define it in a certain sense in order that I may be able to show the position I occupy, toward which leading opinions concerning hypnotism I lean, because there is a diversity of opinions as to its theory, and according to which theory you accept as the basis of your work your opinion as to the therapeutic value of hypnotism may be favorable or unfavorable.

According to Charcot or the school of the Salpêtrière, hypnotism is an artificial neurosis, and can be produced with hysterical persons only; nay, the words hysteria, hypnotism, lethargy, catalepsy, and somnambulism sound in their ears as equivalent terms. We suppress, perhaps, some nervous trouble in some, but we create others. Hypnotism, or suggestive therapeutics, can be applied but very rarely; its domain is very narrow; the dangers of hypnotism are greater than its advantages, because it may bring to life the latent hysteria and will unbalance the nervous system.

Liébeault and Bernheim, at the head of the Nancy school, again, assert that nothing can be more erroneous than the above-mentioned belief, for with the tens of thousands of subjects whom they and their followers have hypnotized, they have never observed any harm or inconvenience resulting, provided they make use of Liébeault's method. According to their views, suggestive therapeutics is nothing else but persuasion, facilitated by a certain psychical condition that exists naturally with some persons and can be obtained in the simplest manner through somnolence or sleep with others; this persuasion is not more dangerous than the comforting sentences physicians in general use.

The great merit of Charcot consists in having scientifically observed the hypnotic phenomena in hystero epileptics; he drew the attention of the scientific world to these, being an authority in the field of nervous diseases on account of his researches, and made possible the researches carried on to-day. By this he created for himself a prominent place in the history of hypnotism, the more so as without his preliminary work the researches of Bernheim would have encountered the same ridicule as those of Liébeault.

Charcot called the phenomena he observed grand hypnotism, in contradistinction to the little hypnotism of Nancy, and distinguished three stages:

1. *Catalepsy* is produced by a strong impression on one of our senses: a loud noise (of a gong, for instance), a strong light suddenly placed before the eyes, fixation of the view on a brilliant object; this last one is the old procedure of Braid. The subject in the cataleptic state is immovable, fascinated; the eyes are open and fixed, the limbs possess a certain plasticity, the reflexes are abolished, analgesia is complete; there is no muscular irritability. Sight and hearing are not changed, and hallucinations may be caused by suggestion. In this state of cataleptic rigidity the subject can maintain the extended position of his body supported only by the head and heels.

2. The *lethargic stage* can be produced primarily by fixation of the eyes on an object, or secondarily, out of the cataleptic state, by closing the eyes. In this stage the subject appears to be in a profound sleep; there is complete analgesia of the skin and mucous membranes, but with all that he has still a certain degree of sense activity. The eyes are closed or half closed; there is a slight vibration of the eyelids; the tendon reflexes are exaggerated. But the chief existing symptom, upon which the school of the Salpêtrière lays the greatest stress, is the neuromuscular superexcitability, and this consists mainly in the fact that slight pressure on a nerve causes the same functional reaction as faradization.

3. *Somnambulism* may be obtained either directly by

* *Deutsche Zeitschr. f. Nervenheilk.*, vol. iv.

† *Zeitschr. f. Nervenheilk.*, vol. vi, December, 1894.

‡ *Archiv f. Psychiatrie*, vol. xvi, p. 698.

Read before the New York County Medical Association, April 20, 1896.

fixation of the eyes or indirectly from the cataleptic or lethargic stages by a slight friction or pressure of the vertex. The somnambulist presents the appearance of sleep; the eyes are closed and the eyelids are vibrating. But instead of a neuromuscular there is a cutaneous-muscular superexcitability; the least contact with the skin causes muscular contraction, and though the sensibility of the skin is increased there is complete anæsthesia for pain. The senses are very acute, and one may cause by suggestion the most complicated automatic actions.

Outside of the Salpêtrière no one has observed these three stages, and it is held that unconscious training produced them. The question arises, Are hypnotism and hysteria always associated, or, in other terms, are only hysterical patients hypnotizable? In accord with the majority of observers, especially those who follow the Nancy method, my researches during several years force me to formulate a negative answer. For me hypnotism is not a special neurosis or a condition exclusively met with in hysterical or neuropathic patients. I have often met with persons who were hypnotizable and suggestible in a high degree, and yet presented no symptoms of hysteria, and I must add that, although we can hypnotize the majority of hysterical subjects, we can not do so with all. The general rule is that the more a person can concentrate his attention the easier and better we can hypnotize him, and I can only reiterate the saying of Forel, of Zürich, that "the sounder a brain is the easier we can produce an impression upon it." In fact, we meet with certain nervous people who can not concentrate their thoughts or attention sufficiently, and therefore can not be hypnotized; these cases are not at all rare among the neurasthenics and hysterical ones, and I am not the only one who has made this observation.

The school of Nancy holds that every person is more or less suggestible, and even the hypnotic sleep can be produced by suggestion only. It defines hypnotism as being a physiological state, closely allied to sleep, in which the suggestibility of a person is very much exalted. The German followers of this school have classified the phenomena of hypnotism into three stages: somnolence, hypotaxia, and somnambulism; but the founders of suggestive therapeutics—Liébeault and Bernheim—for the sake of greater clearness divide them into nine stages or degrees.

First Degree: The patient is only sleepy—drowsy. If sleep is suggested to him, he closes his eyes and is content to remain so; but, if dared to open his eyes, he opens them. There is very little influence obtained in this degree, though a sensation of heat on any part of the body may be induced, and sometimes even therapeutic effects may be obtained.

Second Degree: This is the same as the foregoing, with the addition that the patient can not open his eyes if he is dared to do so.

Third Degree: Here suggestive catalepsy in varying intensity may be caused. The patient retains the position in which he is placed, unless he is dared to change it. He changes it as soon as his dormant will is aroused.

Fourth Degree: Here suggestive catalepsy is pronounced, and all efforts of the patient to overcome it are in vain.

Fifth Degree: Besides catalepsy, rotatory movements of the upper extremities may be induced; also contractures, varying in degree, may be brought about by suggestion. The patient is dared to open or shut his mouth, to drop or to bend his arm, to open his hand, and he can not do so.

Sixth Degree: The subject shows a more or less marked docility, or automatic obedience. He is passive if left to himself, but at a suggestion he rises, walks, stands still if commanded, and remains fixed to a spot when told that he can not advance. It is possible to cause sensory illusions in this degree.

In these six degrees the patient remembers everything that transpires during sleep, and some assert that they have not slept; but it can easily be demonstrated that they have been influenced. The following degrees are called somnambulism, and there is amnesia, complete or partial, upon awakening. Suggestibility reaches here its highest development:

Seventh Degree: Subjects in this degree are susceptible to catalepsy, contractions, automatic movements, automatic obedience, hallucinations, illusions, analgesia, and suggestion of actions. One or the other of these phenomena, however, may be wanting. But there is always amnesia upon awakening.

Eighth Degree: There is amnesia upon awakening, together with all the phenomena observed in the preceding degrees. Susceptibility to hallucinations during sleep is increased, but post-hypnotic hallucinations can not or may but partially be induced.

Ninth Degree: Amnesia upon awakening, with the possibility of inducing intrahypnotic, post-hypnotic, and retroactive hallucinations.

These degrees are not ironclad, and some phenomena may be wanting. Some subjects will never attain to the higher degrees; others, though somnambulistic, may not show some of the lower phenomena. A therapeutic effect may, nevertheless, be obtained even in the lowest degrees. Several of my patients suffering with insomnia, who could not be brought beyond the first degree—*i. e.*, somnolence—rapidly regained their previously failing sleep by suggestion.

As said above, the school of Nancy bases hypnotism and its therapeutic action on suggestion. Its motto, enunciated by Bernheim, is, in fact: "*Il n'y a pas d'hypnotisme, il n'y a que de la suggestion.*" To be able to explain the *modus operandi* of treatment by suggestion, allow me a short digression into its theory.

What is suggestion? Bernheim defines suggestion to be "an act by which an idea is introduced into a brain and is accepted by it." A successful suggestion—that is, one accepted by the brain—tends to transform itself into action. How is this done? The ray or sound vibrations reflected from any object strike the retina or ear. The image formed there is transmitted centripetally by the optic or auditory nerve to the subcortical nerve centres. Here perception results. The impression is elaborated in such a way as to be capable of being transmitted by the nerve filaments which connect them with the respective centres in

the cortex. The cortical centres are the location of judgment, will, an intrinsic part of which is the inhibitory and dynamogenic apparatus. The cortical centres take cognizance of the transmitted perception; the judgment steps in, analyzes it, and either inhibits or exalts the power of the subcortical nerve centres to elaborate the sensory impression. The sensory impression having become a perception, a sensation, it is recorded and fixed in the shape of a memory image, and, according to the quality of the sense excitation that caused it, it will be a memory image of sight, hearing, touch, smell, or taste. The perception, the sensation, becomes a conception. But an object gives several synchronous or consecutive impressions, and the images of these are connected by the power of association into groups. The associated sense images, together with their respective names, are associated again into thoughts, deposited there, and fixed. The more vivid the impression is, the oftener it occurs, the more fixed becomes the image, the longer the memory can retain it. The brain acts in response to these sense excitations according to their agreeable or disagreeable character. Under the control of the inhibitory or dynamogenic apparatus, the brain answers with centrifugally directed impulses to the peripheral organs, either to approach the object which creates an agreeable sensation or to avoid the disagreeable, harmful one. The impulses may be of the motor, peristaltic, vaso-motor, and also of the secretory kind. The images of these impulses are also associated with the combined images of the object.

Suppose, now, that our senses are once more subjected to an impression from the same object. The associated images revive, and very often, also, if only part of the excitation takes place, not only the sensory but also the images of the motor or secretory impulses revive, and under the sway of the centrifugal impulses the various peripheral organs perform their function again in their specific manner. By the frequent occurrence of such act, the lower nerve centres are, so to speak, trained to do a certain work, and, if our judgment and our will are intensely occupied in another direction, our attention is taken up in another way, and an excitation takes place that is not strong enough to force this attention to be directed upon itself, that excitation will be, nevertheless, responded to in the same manner as before, only we do not become conscious of the excitation and the corresponding centrifugal impulse. The act becomes automatic.

But a new concrete sense excitation is not necessary to revive existing memory images in the brain. Abstract conceptions, either emanating from within the brain, by being recalled to our memory by conscious brain activity and by their coming automatically to the surface, or especially those introduced from the external world, have the power to revive them also. Mention the name of a group, and the sense images associated with it will revive, and the quicker and better will this be done the more intensely those images were fixed originally—that is to say, in proportion to the ideoplastic energy of the subject and the intensity and frequency of former excitation and fixation, not only the sensory but also the images of the motor and secretory impulses will be revived. In other words, the accepted suggestion is transformed into image, perception, sensation, and action. Hope, despair, and fear—all abstract conceptions—have such powerful reaction on the organism that they influence disease sometimes in a greater measure than concrete excitations. Nay, the abstract conceptions—that is, those with inadequate external causes—may act with more intensity than the concrete excitation having adequate causes outside the brain. An abstract conception—for instance, confidence that some objects or manipulations will be able to bring back to the normal state the abnormally exaggerated or subnormal functions of the body—can indeed bring it to pass.

Now, given a condition where a subject is more suggestible—*i. e.*, where the cortex activity of a patient, his attention, is intensely occupied in a certain direction, as is the case in the so-called hypnotic sleep—we can by means of verbal or other suggestion create new associations of conceptions, overshadow or eradicate other existing ones, and thus energetically react on the diverse functions of the body in a favorable or unfavorable sense. On this ability of ours to influence the functions of the body by means of suggestion is based the therapeutic value of hypnotism. The hypnotic sleep, being a state of exalted suggestibility only, simply facilitates the introduction of conceptions into the brain, and, so to speak, prevents the cortex in its capacity as criterion from interfering with the suggested activity of the lower nerve centres, and by this with the different activities of the various organs of the body.

Before mentioning in detail what classes of disease may be amenable to suggestive therapeutics, allow me to make the emphatic assertion that no one who has made suggestive treatment his special study thinks of superseding other methods of treatment by it; not one believes it to be a panacea. Nor do I think it to be at all the proper means in most of the internal diseases, or that it should be used alone. The best results are obtained by it in combination with other methods. It should be regarded as standing on the same level with electrotherapeutics and hydrotherapeutics, with gymnastics, massage, and pharmaceutical means. It is self-evident that we can not treat scarlet fever, can not remove a cancer, or eliminate the syphilitic virus from the body by suggestion, but there are enough acute and chronic diseases where suggestion may act in a curative manner.

Functional neuroses of all kinds are favorably influenced by suggestion. *Traumatic neuroses*, such as *railway spine*, and *disturbances of speech caused by fright*, are favorably influenced in a relatively short time. The *nervous disorders of writers and artisans* yield in a very short time to suggestion. *Chorea*, *epilepsy*, and *paralysis agitans* are not influenced favorably, although with paralysis agitans we can cause rest at night, we can improve the walking, and we can lessen the tremor of the hands. Of great importance is suggestion in the *neuroses of co-ordination*, such as *stuttering*. Ringier, Wetterstrand, and Corval report a great number of speedy cures.

As to the treatment of *neurasthenia* by suggestion, the opinions of different observers concur that it is difficult to

hypnotize neurasthenics. Fixation of the eyes should not be practised, and verbal suggestion meets with resistance, because the excited condition of the patient, the unstable condition of his conceptions, does not allow of a psychic concentration; still, the experienced hypnotist will succeed in producing hypnosis, and, once obtained, it proves of great value, although time and perseverance are necessary to obtain good results. The same holds good in the treatment of *hysteria* and *hystero-epilepsy*.

Mental diseases are not at all or very little influenced by suggestion.

Alcoholism is favorably influenced by suggestion. Forel, Wetterstrand, and Lloyd-Tucky report the cure of many cases. I have had several cases where the desire for liquor was readily subdued by suggestion. The famous Keeley cure is most probably nothing else but an abortive attempt at suggestion, as the many relapses testify. The reports of the cure of *morphinism* are less favorable, although Wetterstrand has cured nineteen out of twenty-two cases. Bernheim, Berillon, and others also report cures. I have cured four cases of morphinism, three of which I had to treat with Wetterstrand's method, and this consists of letting the patient sleep uninterruptedly for from ten to twenty days. The habitual use of chloral and other hypnotics yields easily to suggestion.

Facial paralysis after hemiplegia is influenced by suggestion, whereas peripheral facial paralysis not at all. *Tic convulsif*, because it is of central origin and purely functional, can be successfully treated by suggestion, even where other means have been without effect. In *nervous asthma* we succeed very often in aborting attacks and curing it in a few sittings, and in the neuroses of the larynx and pneumogastric nerve we have such excellent results that all other kinds of treatment may be dispensed with.

Neuralgia in its different forms, especially that of the fifth nerve, is favorably influenced by suggestion, and Ringier asserts that the prognosis in such cases does not even depend on the duration and intensity of the malady, for in from four to six sittings most of the cases of neuralgia (except *sciatica*, where more sittings are necessary) can be cured. But all the observers agree that for a successful treatment of neuralgia a comparatively deep sleep is required.

Suggestion may be used symptomatically in various diseases where we can not find any apparent cause. For instance, in *insomnia*, where, though we give increasing doses of hypnotics, we can often not even ameliorate the condition, as well as in a great many pains, suggestive therapeutics may be tried very often with brilliant results, and I do not think we have to heed the reproach which could be made, that we treated symptomatically only; for how often is that done outside of suggestive therapeutics! The same is the case with *habitual headaches;* we may use suggestion with great advantage here, and not very rarely we can effect an entire cure. Even with *migraine*, when it is not based on definite anatomical reasons, we can often cause an amelioration almost instantly; we may abolish the acute pain in a few *séances* and ward off the return of the attacks for months. Of course, if *anæmia*, *chlorosis*, or *nervous dyspepsia* is a concomitant condition, we have to take this into consideration, the more so as these conditions are very favorably influenced by suggestion.

We can very much influence the peristaltic movements of the intestines. *Diarrhœa* can be stopped, and *chronic constipation* of many years' duration, if not based on fermentation, can be removed. I had a case of chronic constipation of fifteen years' standing which was cured by suggestion in a month.

Very interesting are the observations in the treatment of *anomalies of menstruation*. The sudden cessation of the menses and profuse hæmorrhages without apparent anatomical reasons, caused solely by great mental excitement, are not rare, and in such cases suggestion often works wonders; we are able to check a profuse menstrual flow, to shorten the excessive duration and regulate the return of the periods, and to lessen or abolish the pain.

Rheumatic affections are advantageously treated by suggestion, and with *lumbago* it has sometimes a magic effect. We can cause general or local anæsthesia of the skin, which may be taken advantage of in minor operations. In *confinement*, labor may be conducted without pain, *after-pains* abolished, and the secretion of the milk influenced. Of course, this succeeds only in cases where hypnosis is profound.

Neurasthenic conditions in the sexual sphere, such as *psychic impotence*, *satyriasis*, *nymphomania*, *pollutions*, *masturbation*, and their accompanying symptoms, mental depression, weak memory, backache, palpitation of the heart, and a general weakness of the body, may be favorably influenced, the more so as patients afflicted with it sleep easily; of great value especially is suggestion in masturbation, in the treatment of which it may be regarded as a specific, there being outside of suggestive therapeutics no reliable remedy for its cure. In perverse sexual appetite, such as *homosexuality*, it does not promise good results, although Krafft-Ebing, Moll, and Schrenk-Notzing report several cures.

Certain neurasthenic conditions named by the Germans *Zwangsvorstellungen*, such as *astrophobia*, *monophobia*, *claustrophobia*, and *agoraphobia*, yield easily to suggestive treatment, but the patients have to be kept under observation for a long time, for they are liable to relapses. *Enuresis nocturna et diurna* is very often relieved and cured, but it requires a long treatment with successively lengthened intervals between the *séances*.

These are the diseases in the treatment of which we may expect suggestion to be of advantage, and, as I have said above, no harm is likely to result from its judicious use. But hypnotism in the hands of the inexperienced and of those who will not use it as a therapeutic measure solely, but exhibit it publicly, and give terrifying instead of soothing suggestions, may act in time to the disadvantage of the persons they experiment with. Suggestions of fright and horror will act as a shock to the nerves, as they do without the hypnotic condition also; repeat this often and it will end by unbalancing the nervous system. On this account public exhibitions of hypnotism and its practice, if used to other than therapeutic ends, should be prohibited by law,

as is already done in Europe and in one or two of the Western States.

The following are a few cases, taken from a number I have treated, with a view to illustrate what can be done by suggestion:

Case I.—W. R., aged twenty-two years, single, born in New York; occupation, housework. Family history negative; she herself has no hysteria or syphilis. Came to me with ulcers on both legs after having been treated by another physician for some weeks. My treatment was equally unsuccessful for some time; the ulcers continued to enlarge. Then, thinking there might be some syphilitic taint in her blood, I gave her "mixed treatment." From this time on the ulcers rapidly grew better, and in a few weeks were entirely healed. I then gave her tonics for some months and discharged her. Eight months later she came to me again with ulcers beginning to appear on both legs. Naturally, I prescribed the "mixed treatment" again. The patient grew worse, the ulcers larger; she lost her appetite, could not sleep, was coughing, and had night sweats, and at last, in the ninth week, a rash appeared on the whole body, accompanied by an intense itching that made her condition unbearable. As itching usually depends on central perception, the idea came to me to remove it by means of suggestion. I hypnotized the patient; she came into the somnambulic stage the very first time. I suggested to her that the itching would stop intrahypnotically. The itching disappeared instantly. Then, by way of experiment, I suggested that the ulcers would heal within a week, the sleep would return, the cough, as well as the night sweats and rash, would disappear, and the appetite would increase. I saw her after a week. Dr. Hoeber, the present coroner, whom I accidentally met, went with me. To my great astonishment, the patient herself opened the door for me—she who could scarcely walk before on account of weakness. The ulcers were almost healed; only pinhead openings were left. The cough was much better, she slept the whole night, and she ate heartily. The night sweats, rash, and itching had entirely disappeared. By means of several hypnotizations and the use of tonics she was well in four weeks. During the past two years the ulcers have not reappeared, and the patient enjoys good health and has gained in weight considerably.

Case II.—Mrs. W., aged thirty years, married, nō children; born in Hungary; nurse. Family history negative. Has had no serious sickness since infancy; no symptoms of hysteria; is anæmic and a little nervous at present. Three years ago she caught a cold, as she says, had slight fever, and had to urinate very often, each time accompanied by intense pain and burning. The fever, pain, and burning abated after a few days, but the desire to pass water increased so that at night she had to get up to do it from six to eight times, and had to micturate every five minutes during the day. This continued for two years and a half in spite of treatment by several physicians. Having ascertained that there was no organic trouble to cause it, the urine containing nothing that could irritate the bladder or sphincter, and referring the whole trouble to psychical causes, I hypnotized her. In the first *séance* I suggested to her that she would pass water at night only three times and in the daytime not oftener than every half hour, the suggestion to hold good for two days. As suggested, so it came to pass. In the following sittings I gradually lengthened the intervals, with the result that four weeks later she did not need to micturate at all at night and only three or four times during the day. The result seems to be permanent, for during the last four months the condition has remained the same.

Case III.—Ada D., aged twelve years, born in Russia. Father is well; mother is nervous and suffers with migraine. As a child she was very weak and could not walk until four years old. No hysterical stigmata. At present she is anæmic but otherwise well. During the past four years and a half she has vomited after each meal (half an hour after ingestion). The case was referred to me by Dr. Henry Herbert with the diagnosis "hyperemesis juvenilis." There were no symptoms of dyspepsia, no pain in the epigastric region, and only a slight dilatation of the stomach noticeable. From July 2, 1895, when she easily came into the hypnotic sleep, until September 2d of the same year I hypnotized her fourteen times. Six suggestions made at different times were sufficient to stop the vomiting, and the other sittings were done only for the sake of insuring the result. The patient is well and has not vomited again. The anæmia has, of course, disappeared.

Case IV.—Mrs. A., of R., New Jersey, aged thirty-five years, born in Germany, comes of a family of neurasthenics. She is decidedly hysterical, and has frequent hysterical attacks. She was apt to have slight hæmorrhages from the uterus, probably caused by psychical disturbances, no other cause, by the most scrupulous examination, being discernible. These hæmorrhages were usually checked by means of hot douches and ergot. One day I was called by dispatch and found her flooding. The flow of blood from the uterus was so severe that I could not think of tamponing; tampons would have been washed away. Ergot I did not have with me and a drug store was too far to send for it, so I could not use it hypodermically. Hot water or ice would not have acted quickly enough. Something had to be done; she began to be cyanotic and could scarcely speak. Having had occasion to hypnotize her some weeks before for some other ailment, I knew that she rapidly went into a deep hypnotic condition. I hypnotized her and suggested that the uterus should contract and the bleeding stop. About fifteen seconds later the hæmorrhage ceased, and my left hand placed over the abdomen could distinctly feel the uterus contract. Suggesting euphoria, I woke her up. When awake, she related to me that during the previous few days she had had several quarrels in the family, and also that she had been frightened the night before. The bleeding had begun two days before, but, as it was slight, she paid no attention to it, having been accustomed to slight hæmorrhages. But the bleeding became more profuse, reaching its maximum when I arrived. During the recital of this the hæmorrhage began again. The mental excitement having been the cause of the former hæmorrhage, the recital of the causes of this excitement caused a new excitement, and this had the same effect. I hypnotized her again, suggested the same as before, with the addition that she should forget the exciting incidents of the last few days. The bleeding stopped again, and she had forgotten everything that was disagreeable during the last few days. Now, having time enough for drugs to act, I prescribed the necessary means to insure the continuation of the favorable result.

Of the numerous cases of masturbation I have treated, let me cite only one in conclusion:

Case V.—J. S., male, aged nineteen years, born in Germany, clerk, nothing hereditary. Came to me complaining of lassitude, backache and headache, inability or lack of energy to work. On inquiry he confessed masturbating for eight years almost every day. I hypnotized him and suggested the disap-

pearance of all these symptoms, and furthermore suggested that during the next twenty-four hours he could not masturbate and would be hindered in doing so if inclined to disobey. Next day he came to me again, telling me that he felt much better; that, in fact, all his ailments had disappeared; but at night, being very tired and about to sleep, not thinking at all of my command to the contrary, his hand found the usual way to his penis to perform the well-accustomed act. He had scarcely touched the penis when he felt an electric shock going through his body, and at the same time heard a voice say "Stop!" The voice was so loud that he sat up in his bed to see if there was anybody in the room. This night he did not attempt it any more. Sixteen sittings with energetic suggestions and lengthened intervals between the sittings put a stop to his bad habit in two months. The desire is gone also and the patient feels very well. For two years there has been no idea of a relapse into his former habit.

Bibliography.

Revue de l'hypnotisme.
Zeitschrift für Hypnotismus.
Bernheim. *Suggestive Therapeutics.*
Hirsch. *Suggestion und Hypnose.*
Moll. *Hypnotism.*
Forel. *Der Hypnotismus.*

653 Lexington Avenue.

THE CAUSE OF SUDDEN DEATH AFTER ANTITOXINE INJECTIONS.*

By A. SEIBERT, M. D.,
PROFESSOR OF PEDIATRICS, NEW YORK POLYCLINIC,
AND F. SCHWYZER, M. D.,
PATHOLOGIST TO THE GERMAN HOSPITAL.

In attempting to find the cause of sudden death after a hypodermic injection of antitoxic serum, all arguments point to the fact that death is caused by a something introduced under the skin of these patients, and not by shock. The labored respiration, the cyanosis, and the subsequent cessation of breathing reported in these cases give the clear picture of death from suffocation.

The second conclusion arrived at *a priori* is that this something injected under the skin could have exerted its deleterious action only by entering the circulation.

These conclusions led one of us (Seibert) to devise a series of experiments on animals, to determine as nearly as possible the conditions under which an injection of antitoxine could prove fatal.

The first possibility to be thought of was that the serum itself might do the killing, either by entering the circulation too rapidly and in too large a quantity by an opened vein, or by poisonous substances having formed in the antitoxine in consequence of decomposition. Therefore the first series of experiments had to determine:

1. Whether large quantities of *fresh* antidiphtheric serum brought directly into the blood current of an animal could produce unfavorable symptoms or death.

2. Whether large quantities of *old* antitoxine could cause trouble when used in this manner.

The second possibility to be thought of as a factor in causing sudden death after an antitoxine injection is the *carbolic acid*, said to be used in preserving the antidiphtheric serum. Here it would be necessary to work with exact quantities and to determine how large a quantity of a given carbolic-acid solution could cause unfavorable symptoms and death. Beginning to experiment with small quantities and weak solutions, and gradually increasing the amount and strength, would ultimately lead to the desired result.

The third possible factor as a cause of sudden death after the use of antitoxine is *air*, a quantity of which is found with the fluid in every syringe used for hypodermic injections. Here again it was necessary to first determine if air brought directly into the blood-current in limited quantities could cause pathological phenomena, then to find the amount of air necessary to cause disturbances or death, and at last to ascertain under what characteristic pathological and clinical manifestations such results would show themselves.

If animals could be killed with antidiphtheric serum, the following second series of experiments with carbolic-acid solution would show whether this drug gave similar symptoms on being injected in the same manner, and, if not, would prove that as yet unknown powerful poisons had formed in the serum, and then old serum would be likely to be the most poisonous.

The intended experiments with carbolic-acid solutions would not alone prove the serum to be either free from or filled with a poisonous quantity of carbolic acid, but also would prove whether or not the symptoms caused by these injections were analogous to the ones found in patients dying after antitoxine injections. If at last it was shown by the first two series of experiments that animal life could not be quickly destroyed by either large quantities of antitoxic serum or by reasonably proportionate quantities of adequate carbolic-acid solutions, there would only remain to determine how small a quantity of air injected into a vein would suffice to cause the well-known death of air-embolism.

As it was clear that, whether serum, carbolic acid, or air caused death in these cases, the contents of the syringe after a hypodermic injection could reach the heart quickest by a vein, this channel was chosen to bring the antitoxine and its possible by-mixtures into the blood current.

After outlining this plan of action, the second one of the authors of this report (Schwyzer) was requested to take part in this investigation, so as to perform the laboratory work himself, but always assisted by and in co operation with the other author.

All the following experiments were made by means of intravenous injections, executed through Luer's blunt injection cannula, filled with sulphate of magnesium (to prevent coagulation of blood), shut off by means of a stopcock, and tied firmly into the internal jugular vein by two ligatures.

From the start we confined our observations to the changes brought about in the animals during and imme-

---

* Read before the American Pædiatric Society, in Montreal, May 26, 1896.

diately after the injections, and pronounced every animal unchanged in case its respiration and heart action were not altered during the twenty to thirty minutes after an injection. The action of the heart we observed in most animals by direct inspection of this organ before, during, and after each injection, through a window cut into the thorax by the resection of two ribs. Besides, we observed the heart's action by the stethoscope, and so could readily judge as to rhythm and strength.

Every animal was first narcotized with a mixture of chloroform, alcohol, and ether, then tied down upon its back, and then the throat and the thorax were exposed by removing the skin by an incision along the median line from the chin down to the diaphragm. Thus we were enabled to perceive any change in the circulation, especially as to a possible cyanosis. Before making an injection the effects of the narcotic were allowed to disappear so far that the corneal reflexes could be elicited. In no case was the narcotic continued after this response.

I. Antitoxine Injections.

First Experiment.—Full-grown guinea-pig. Four cubic centimetres of Behring's antitoxine No. 2, containing four hundred antitoxic units, filled December 20, 1895, at a temperature of 95° F., were injected rapidly into the right internal jugular vein.

Result.—Respiration and heart's action slightly accelerated (from 20 and 120 to 30 and 130 respectively), but returning to the normal within a minute.

Second Experiment.—Full-grown guinea-pig. Four cubic centimetres of a physiological salt solution were injected.

Result.—Identical with that of experiment No. 1.

Third Experiment.—Full-grown guinea-pig. Five cubic centimetres of Behring's serum, equal to 500 units, were injected.

Result.—Animal remained normal.

Fourth Experiment.—Full-grown guinea-pig. Five cubic centimetres of Behring's serum, equal to 500 units, injected. No reaction. After ten minutes another dose of 400 units was injected.

Result.—Animal remained perfectly normal.

Fifth Experiment.—Full-grown guinea-pig. Five cubic centimetres of Behring's serum, equal to 500 units, filled December 23, 1894, injected, and two minutes later another dose of four cubic centimetres of the same.

Result.—No reaction whatsoever.

Sixth Experiment.—Full-grown rabbit. Ten cubic centimetres of Behring's serum, equal to 1,500 units, were injected within thirty seconds.

Result.—No reaction whatsoever.

II. Carbolic-acid Injections.

Behring's antitoxic serum is supposed to contain a half per cent. of carbolic acid, so that five cubic centimetres would represent 0·025 of phenol. Our tests have been made with much stronger solutions.

First Experiment.—Full-grown guinea-pig. One cubic centimetre of one-per-cent. carbolic acid in physiological salt solution injected.

Result.—Immediately after the injection (two to three seconds), slight convulsive movements of the extremities, persisting during ten seconds; after this, respiration and heart normal. Within the following fifteen minutes three more doses of this one-per-cent. solution were injected at intervals of five minutes, resulting each time in the same slight, quickly disappearing twitchings. During the twenty minutes following these four injections (containing in all 0·04 of phenol) the animal remained perfectly normal.

Second Experiment.—Full-grown guinea-pig. Four cubic centimetres of one-per-cent. carbolic acid in physiological salt solution injected.

Result.—Violent convulsions, with marked cyanosis, accelerated respiration and heart's action (the beats too numerous to count) began immediately and persisted for twenty-five seconds, then there was an occasional twitching, and apparently the normal condition one minute later.

Third Experiment.—Full-grown rabbit. One cubic centimetre of a one-per-cent. carbolic solution was injected.

Result.—Slight occasional twitchings, five during the first fifteen seconds after the injection; normal after one minute.

Fourth Experiment.—Full-grown rabbit. Two cubic centimetres of a one-per-cent. carbolic solution injected.

Result.—Violent convulsions, with marked cyanosis immediately after injection, persisting for thirty seconds; then an occasional twitching; normal after three minutes.

Fifth Experiment.—Full-grown rabbit. One cubic centimetre of a two-per-cent. carbolic solution was injected.

Result.—Immediate violent tetanic convulsions, with cyanosis, persisting for thirty-five seconds; normal after one minute.

Sixth Experiment.—Full-grown rabbit. Two cubic centimetres of a one-per-cent. carbolic solution injected.

Result.—Convulsions during thirty seconds following the injection; normal after two minutes.

Seventh Experiment.—Full-grown rabbit. One cubic centimetre of a one-per-cent. carbolic solution injected twice at intervals of five minutes.

Result.—Slight convulsive twitchings, then normal.

Remarks.—In these experiments we injected from 0·01 to 0·04 of phenol into the jugular vein, and in every instance elicited a reaction perfectly identical in aspect, only varying in intensity and corresponding to the dose of carbolic acid. This reaction could not be due to simple mechanical irritation, as four cubic centimetres of a physiological salt solution have never produced a similar effect. As soon as the carbolic solution reached the heart (in two to three seconds) the convulsions began in each animal over the whole body, therefore long before the phenol had passed through the lung and could have reached the nervous system. This proves that these carbolic convulsions are most probably of a reflex character—*i. e.*, the phenol doubtless causes irritation of centripetal nerve fibres along the inner surface of the vein and of the heart. In the human body this irritation would be very slight, for even a small child has very much more blood than a guinea-pig or a rabbit, and therefore the percentage of carbolic acid would be proportionately smaller. We could distinctly observe that the effect of the carbolic injections in all of our experiments was much more dependent upon the concentration than upon the quantity of the solution injected, as is best seen by comparing the fifth and sixth experiments.

III. Intravenous Injections of Air.

That air brought into the venous circulation can prove fatal is well known, but as yet the smallest fatal dose has

(to our knowledge) not yet been determined. We have succeeded in finding this for the kind of animals used in the following experiments. While fully appreciating the difficulty in drawing conclusions from the animal to the human body, a certain analogy might be permitted, after comparing the capacity of the heart in guinea-pigs, rabbits, and children.

First Experiment.—Full-grown guinea-pig. Four cubic centimetres of air were slowly injected into the jugular vein.

Result.—Complete cessation of respiration within thirty seconds, after five jerky inspirations. Heart contractions were visible for five minutes, growing weaker continually.

Necropsy.—All blood-vessels leading to and from the heart were first ligated. Air was visible in the vena cava. The right ventricle and auricle were enormously dilated. There was air in the pulmonary artery; no air in the pulmonary veins. The heart floated on water. On opening the heart under water the right auricle and right ventricle were found full of air. The left auricle and ventricle were decidedly contracted. Neither contained any air and but little blood, hardly three quarters of a cubic centimetre in all. All the veins contained much blood. The lungs appeared very pale and on section seemed to contain less blood than usual.

Second Experiment.—Full-grown guinea-pig. One cubic centimetre of air and four cubic centimetres of Behring's antitoxine (equal to 400 units) were injected together, the air in the middle of the fluid.

Result.—Marked dyspnœa and cyanosis within five seconds, respiration less and less frequent and more and more superficial. The heart beat at first over two hundred times a minute. Air in the heart could be distinctly heard through the stethoscope, like crepitant râles. Cessation of breathing within five minutes.

Autopsy.—After seven minutes slight heart contractions were still visible. After ligation of blood-vessels, the heart floated on water. Three fourths of a cubic centimetre of air was caught under water from the right auricle and one fourth of a cubic centimetre of air from the right ventricle, in a graduated tube. There was air in the pulmonary artery; no air in left heart, and very little blood. Lungs pale.

Third Experiment.—Full-grown guinea-pig. A quarter of a cubic centimetre of air was slowly injected by means of a screw syringe.

Result.—Respiration became slow and jerky, and cyanosis appeared. After two minutes the animal was apparently in a normal condition. Another dose of half a cubic centimetre of air brought forth similar symptoms, but more marked in intensity. After three minutes the animal was again normal. Then another half cubic centimetre of air was given with the same result. Air could be heard in the heart through the stethoscope. After another quarter of a cubic centimetre of air had been injected there was sudden respiratory paralysis.

Autopsy.—The same appearances were found as in the first experiment.

Fourth Experiment.—Full-grown guinea-pig. Every five minutes half a cubic centimetre of air was injected.

Result.—Sudden death after the third dose by cessation of respiration. A change of the heart's action from the normal 120, to over 200 beats a minute after the first half cubic centimetre could be distinctly seen, as well as the complete cessation of ventricular contraction on the third dose.

Autopsy.—The same appearances.

Fifth Experiment.—Full-grown rabbit. Two cubic centimetres of air in one dose. Death in five minutes.

Sixth Experiment.—Full-grown rabbit. Two cubic centimetres of air in one dose. Death in five minutes.

Seventh Experiment.—Full grown rabbit. Two cubic centimetres of air in one dose. Death in five minutes.

Eighth Experiment.—Full-grown rabbit. Two cubic centimetres of air in one dose. Death in five minutes.

Autopsies.—The appearances were the same as in those of the other animals.

Ninth Experiment.—Full-grown rabbit killed quickly by chloroform.

Autopsy.—Diastolic condition of the heart, excepting the left ventricle, which was slightly contracted. The blood-vessels leading to and from the heart were carefully ligated without pressure upon the organ. By first weighing the full heart, then emptying one chamber after the other and weighing after each opening, the following figures were obtained:

The full heart weighed 12·38 grammes; the right auricle contained 0·92 grammes of blood; the right ventricle contained 2·12 grammes of blood; the left auricle contained 0·74 grammes of blood; the left ventricle contained 0·62 grammes of blood.

If we take the specific gravity of the blood at 1·060, to simplify calculations, then we shall have to deduct about six per cent. of the contents of the heart, so that in reality the right auricle would hold but 0·88 and the right ventricle but two cubic centimetres. The fatal dose of air injected into the vein of a rabbit appears to be two cubic centimetres—about half the capacity of the whole heart. It is similar in the guinea-pig, the heart of which is of about half the size of that of the rabbit, for here one cubic centimetre is the fatal dose.

If a large quantity of air is injected at once (one to two cubic centimetres in a guinea-pig and two to four cubic centimetres in a rabbit), then the right heart is simply filled by air, the circulation therein ceases, as it would require an enormous pressure to replace the blood in the capillaries of the lung by air, on account of the adhesive affinity of this fluid to the inner surface of these minute blood-vessels, and so death ensues very rapidly. If, on the other hand, a smaller quantity of air is injected (say thirty to sixty per cent. of the cubic capacity of the right heart), then air and blood have sufficient space by the side of each other, and the air, being of lesser weight, will collect in the upper recesses of the heart chambers, and death will result slowly through gradual insufficiency of the heart muscle to overcome the passive pressure of the air, together with the accompanying insufficient oxidation of the blood. In some cases a sufficient quantity of air may be pressed by the heart into the pulmonary artery to suddenly stop all blood supply to the lung.

Résumé.—In reviewing the foregoing experiments we may make the following statements:

1. Large quantities of fresh and of old antitoxic serum injected quickly into the venous circulation of guinea-pigs and rabbits did not cause the slightest reaction.

2. Carbolic acid in one- and two-per-cent. solutions injected in from one- to four-cubic-centimetre doses in the same animals invariably caused characteristic convulsions immediately, differing only in intensity and duration, proportionate to the quantity and concentration of the solution.

3. Air injected into the venous circulation of such animals invariably caused difficult respiration, rapid increase in the heart's action, cyanosis, and ultimately death. The intensity and rapidity with which these symptoms appeared were in direct proportion to the amount of air injected into the vein at one time in so far that a larger quantity would cause death quicker than a smaller one; a smaller one injected quickly and at once would kill more speedily than a larger one injected slowly and at given intervals. A smaller quantity of air might cause speedy death (in five to ten seconds) if passed at once through the right heart into the pulmonary artery, causing complete occlusion, and a larger quantity remaining in the heart might not prove fatal for from five to twenty minutes.

Conclusions.—1. Antitoxic serum does not seem to be capable of causing threatening symptoms and speedy death, even when brought quickly into the blood current in very large doses.

2. The carbolic acid used in preserving the antidiphtheric serum must be in such a weak solution as to be entirely unable to cause the characteristic carbolic convulsions produced in every one of our second series of experiments. The absence of these convulsions in the cases of sudden death in patients, the entirely different group of symptoms reported in them, and the fact that guinea-pigs and rabbits will survive even very large and concentrated doses of carbolic acid injected into a vein, lead us to discard the possibility of this drug having caused the reported deaths.

3. Even very small quantities of air will cause severe disturbances and ultimate cessation of breathing in every animal experimented upon. These disturbances are entirely analogous to the symptoms reported as preceding the sudden deaths after antitoxine injections. Air is found alongside of the fluid in every syringe used for hypodermic injections, and being pressed under the skin with the fluid may readily come in contact with a punctured cutaneous vein and so may enter the blood-vessel and the right heart, even before the serum has been absorbed.

In view of these facts and of our experiments, we here express our firm opinion that the sudden deaths reported after antitoxine injections were caused by injected air and not by the antidiphtheric serum.

A NEW SEMIFLUID PRODUCT, OLEO-STEARATE OF ZINC.

By WALTER F. CHAPPELL, M. D.,
SURGEON TO THE MANHATTAN EYE, EAR, AND THROAT HOSPITAL.

Medicinal remedies for intranasal, pharyngeal, and laryngeal use should be more or less fluid, non-irritating, protective, tenacious, and easy of application. Owing to the necessarily fluid character of spray and douche solutions, these conditions are not fulfilled by them; neither do these solutions remain in contact with mucous surfaces long enough to produce their fullest remedial benefits.

The semifluid oily preparation described by me in the *Annals of Ophthalmology and Otology* for April, 1895, met many of the objections to sprays, but the lard and petroleum products of the base did not prove entirely satisfactory. The taste was unpleasant, and they did not retain the same density at all temperatures.

Mr. W. J. Evans, of the house of McKesson & Robbins, has carried out certain suggestions of mine in the formation of a new compound—oleo-stearate of zinc—which is chemically and pharmaceutically perfect, and is a valuable advance in the pharmacy of semifluid preparations. This stearic compound is prepared by combining a form of stearate of zinc with benzoinated liquid albolene, to make an opaque, semifluid, white, creamlike product, having a specific gravity at 60° F. of 0·832. It does not precipitate at the temperature of 212° F. and remains fluid at 14° F. and lower. It is neutral to litmus paper, almost tasteless, and entirely non-irritating to any mucous membrane.

My experience with this preparation has been chiefly in the treatment of diseases affecting the linings of the upper respiratory passages, but it may be used as an effective application to the skin or to any mucous surface. In my experience the oleo-stearate of zinc is specially valuable for intranasal applications in cases of diphtheria and scarlet fever, and in all diseases of the upper air tract occurring in young children. When applied in the nose with a camel's-hair brush, it clings for hours to the glandular openings or to any abrasions or spots of ulceration on the mucous membrane. It is readily diffused over the membrane of the nasopharynx, pharynx, and larynx; it may also be applied to the latter with a medicine dropper.

The oleo-stearate of zinc may, of course, be employed alone or in such combinations as the nature of the case indicates. The following combinations have, in the writer's experience, been most valuable: *Oleo-stearate of zinc with balsam of Peru*, in conditions requiring stimulation and healing. *With liquor plumbi subacetatis*, in acute rhinitis or the coryza accompanying a common cold. *With boric and carbolic acids*, in copious watery nasal discharges and hyperæmic conditions. *With iodine*, in dry and atrophic rhinitis and ozæna. *With tannic acid*, in nosebleed, and catarrhal conditions characterized by yellow discharges. *With camphor and menthol*, it is cooling, and therefore available in hay fever and coryza. *With acetanilide*, it is applied after operations as an antiseptic and protective. *With antipyrine*, as a hæmostatic in recurring epistaxis, and as a sedative in irritable conditions of the mucous membrane. *With oleum pini pumilionis and eucalyptol*, it is soothing and curative as an intratracheal injection, in chronic bronchitis and asthmatic affections. *With oleum pini pumilionis*, as a sedative in irritable conditions of the nasal mucous membrane characterized by excessive sneezing. *With orthochlorphenol*, it is valuable in syphilitic ulcerations and ozæna.

THE BEST METHOD OF TEACHING OBSTETRICS.

By J. CLIFTON EDGAR, M. D.

In his introduction to the elaborate scheme of instruction here elucidated, the author recalls the statements as to the necessity for reform in haphazard didactic lectures on

* An abstract of a paper read before the American Academy of Medicine, May 4, 1896.

this branch of medicine so universally prevalent a decade since. The student was taught the art of obstetrics; the science of midwifery was a sealed book to him, and the world was the sufferer thereby. While this condition has not entirely changed, the lengthened courses and modern methods of instruction, establishment of new lying-in hospitals, and the opening of them to the student in his collegiate course, has removed much of the reproach richly deserved ten years ago. Now there are in New York city six medical schools which require that each student shall have attended at least six cases of confinement before graduation, where no such condition and no opportunity of fulfilling it previously existed, and five institutions devoted to lying-in cases whose wards are open for obstetric teaching.

The student should acquire a working knowledge of the science before applying himself to the art of midwifery. The subject should not be taken up until his second year, after courses in anatomy and physiology. His ideas as to the size, shape, and position in space of the female pelvic organs, as well as their histological anatomy, should be clear and crystallized. After this, the student's work should be so systematized as to turn him out at the end of three years more, if not an accomplished, at least a competent accoucheur. Some definite plan must be adopted, and experience has taught that the method embraced in the four following divisions, taken up in the order named, is the best:

1. *Systematic Biweekly or Triweekly Recitations during the Second College Year.*—An effort is being made to supplant the old didactic lecture with these recitations, which are made as real and interesting as possible to the student by abundant illustration. The means of illustration are readily attainable and consist of pelves, entire and in section, models, wet and dry preparations, obstetrical instruments, and plenty of blackboard space. The class should not exceed twenty, and each individual should have his task assigned to him, a portion (five) of the section taking the blackboard, another the specimens, a third the models, and a fourth being quizzed while waiting. A sufficient time at the end of the hour is reserved to go over the work of the divisions. Among the wet specimens are placentæ with membranes and ova, embryos and fœtuses, uteri with decidua; among the dry, placentæ injected through the vessels. Of the models, sagittal sections of the pelvis, mounted on a blackboard, so as to allow of being fixed in any plane, are most useful. As illustrations of the branches taught in this way may be mentioned pelvic deformity, malposition, and the causes and methods of delivery.

2. (1) *Demonstrations and Manikin Work*, (2) *Attendance upon Obstetric Clinics, and* (3) *Laboratory Work during the Third Collegiate Year.*—The instructor should be a demonstrator of obstetrics, and his department should consist of a combined museum, manikin, and recitation room, furnished with all the aids to teaching in this line. The class should not exceed thirty. (1) Biweekly or triweekly meetings for six or eight weeks will pretty thoroughly cover the ground so far as demonstration and manikin work goes. A review of the theoretical work of the second year should be given a practical application. The whole section should be occupied as before. Three or four manikins, fœtuses, puppets, placentæ, pelves, and models must be constantly at hand to demonstrate the parturient canal, with its curves, cervical dilatation, size and shape of the uterus at various stages, rupture and repair of the canal, etc. These are to be viewed as auxiliaries merely, and care should be taken that no misconception arises. This is the time or opportunity given the student to render himself expert in the use of his knowledge. An occasional demonstration of the diagnosis of pregnancy on the living subject should be made. (2) Attendance at an obstetric clinic will be of service in fixing the student's theoretical work and demonstration, and, if possible, he should watch the delivery in several cases. If he can take his maternity service now, so much the better. (3) Special opportunity to study advanced pathology, bacteriology, and embryology should be provided for the student. Advanced research is best undertaken in vacation intervals, owing to press of other work.

3. *Resident Service in a Maternity Hospital*—which shall include (1) examination of pregnancy under competent instructors. Actual delivery by the student himself under rigid supervision in both. (2) Indoor service; and (3) "outdoor" or polyclinic service. Attendance on the (4) obstetric clinics of the hospital, (5) theoretical lectures (illustrative in character), and (6) recitations on the practical work performed.

The student should not only witness but actually confine the patients, always under the eye of an instructor. 1. His first observations in the hospital should be in the examination and care of pregnancy, carried out with minute detail relating to labor, puerperium, and newborn children. The principles of obstetrical cleanliness should be thoroughly inculcated. 2. After examining several pregnant women, the student may be allowed to confine cases under supervision in the wards, the future care of the cases being assigned to him. 3. The out-patient service may now be opened to him, and its advantages are really greater, for he is thrown to some extent on his own resources, being practically in charge of the case. 4. Each delivery may, in the maternity, be made the occasion for an obstetric clinic, all the steps in the management of labor and operations in interference being explained. 5 and 6. Little time will be left for theoretical lecture and for recitation, but, if introduced, they should bear on the work in hand.

4. *Theoretical or Didactic Lectures on Advanced Obstetrics.*—There is still a place for this form of instruction. The course should be given in the fourth year, and cover abortion, puerperal infection, extra-uterine gestation, etc. Fifteen minutes of each hour should be given up to recitation on the preceding lecture.

The author wishes to make an earnest plea that obstetrics be not regarded as a specialty, but as an integral part of medicine and surgery, covering a part of both fields and linking them more closely together, and claims that this fact should be brought home to the student on every possible occasion. His views are supported by a number of illustrations—toxæmia, glycosuria, in the field of medicine; dilatations, curettage, in that of surgery.

No. 54 East Thirty-fourth Street.

THE

NEW YORK MEDICAL JOURNAL,

A Weekly Review of Medicine.

Published by D. APPLETON & Co.

Edited by FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, MAY 30, 1896.

TYPHOID FEVER AND THE WATER SUPPLY.

MR. JOHN W. HILL, of the American Society of Civil Engineers, in a recent address before the faculty and students of the University of Illinois, collated some interesting statistics concerning the typhoid-fever mortality and the water supply of sixty-six cities for the years from 1890 to 1894 inclusive and others for the year 1894 alone, also concerning the percentages of typhoid-fever mortality in eighteen American cities during the period from 1890 to 1895 inclusive. A summary of the facts adduced, together with a forcible commentary, will be found in an editorial article in the *Engineering News* for May 21st. The list of the sixty-six cities begins with the one that shows the lowest average typhoid-fever mortality for the five years, and ends with the one that shows the highest average mortality of that sort.

In the order mentioned, the cities, their water supply, and their typhoid-fever mortality in each hundred thousand of population are as follows: The Hague, water filtered from sand dunes, 4·9; Rotterdam, filtered from the River Maas, 5·2; Christiania, the source of the water not mentioned, 6·8; Dresden, a filter gallery by the River Elbe, 6·9; Vienna, springs in the Schneeberg, 7·0; Munich, spring water from the Mangfall Valley, 7·1; Copenhagen, the source of the water not mentioned, 7·9; Berlin, the water filtered from Lake Tegel and the River Spree, 8·0; Breslau, filtered from the River Oder, 11·6; Amsterdam, filtered from the Haarlaem Dunes, 13·9; Stockholm, the source of the water not specified, 14·3; Brisbane, with no data concerning the water, 14·3; London, with seventeen per cent. of its water from the Kent wells and the rest filtered from the Thames and the Lea, 14·6; Edinburgh, filtered from a reservoir in the Pentland Hills, 15·8; Trieste, with no specification about the water, 17·0; Brooklyn, impounded and well water, 19·0; New York, impounded from the Croton and Bronx Rivers, 20·4; Davenport, filtered from the Mississippi River, 21·4; New Orleans, rainwater from tanks and cisterns, 21·4; Sydney, impounded from the Upper Nepean, 21·6; Hamburg, from the River Elbe (filtered since May, 1893), 21·8; Budapest, ground water from wells, 22·4; Glasgow, Lake Katrine, 22·8; Brussels, the source of the water not given, 26·2; Paris, the rivers Seine, Marne, Vanne, and Ourcq, a canal, artesian wells, etc., 26·4; Manchester, Lake Thirlmere, 27·6; Venice, the source of the water not stated, 30·2; Milwaukee, Lake Michigan, 32·0; Rome, the Fontanadi Trevi, Acqua Felice, and Paoli, 32·2; Boston, Lake Cochituate and Sudbury River, 32·6; Detroit, Detroit River, 33·8; Dayton, driven wells, 36·0; Turin, the water supply not specified, 36·8; Liverpool, Lake Vyrnwy, 37·0; Buffalo, the Niagara River, 39·2; Providence, the Pawtuxet River, 39·2; Covington, the Ohio River, 39·4; San Francisco, impounded from mountain streams, 40·2; Prague, with no facts about the water supply, 43·2; Minneapolis, the Mississippi River, 45·4; Baltimore, Lake Roland and Gunpowder River, 45·8; Newark, impounded from the Pequannock River since April, 1892, 45·8; St. Louis, the Mississippi River, 47·0; Newport, Kentucky, the Ohio River, 47·5; Philadelphia, the Schuylkill and Delaware rivers, 48·2; Denver, the South Platte River, 48·3; Cleveland, Lake Erie, 49·2; St. Petersburg, filtered from the River Neva, 52·3; Cincinnati, the Ohio River, 52·4; Moscow, from springs, ponds, and the Moscov and Yanza rivers, 57·0; Toronto, Lake Ontario, 57·8; Quincy, Illinois, filtered from the Mississippi River, 58·0; Dublin, filtered from the River Vartry, 58·8; Knoxville, filtered from the Tennessee River, 61·9; Milan, the source of the water not mentioned, 62·0; Jersey City, the Passaic River, 75·0; Washington, the Potomac River, 76·6; Louisville, the Ohio River, 79·4; Chattanooga, the Tennessee River, 80·0; Chicago, Lake Michigan, 84·0; Pittsburgh, the Allegheny River, 91·7; Lowell, driven wells and the Merrimack River, 92·4; Atlanta, filtered from the Chattahootchie River, 92·8; Lawrence, filtered from the Merrimack River, 96·2; Alexandria, Egypt, the River Nile, 162·4; and Cairo, the River Nile, 189·4.

For the year 1894 the mortality was as follows: For Munich, 2·5; for Christiania, 3·0; for the Hague, 3·4; for Berlin, 4·0; for Rotterdam, 4·8; for Vienna, 5·0; for Hamburg, 6·0; for Breslau, 6·1; for Copenhagen, 6·7; for Dresden, 8·2; for Stockholm, 8·3; for Amsterdam, 8·5; for Brisbane, 9·6; for Brussels and Budapest, 14·0; for London, Edinburgh, Brooklyn, and Newark, 15·0; for New York and Toronto, 17·0; for Manchester and Venice, 18·0; for Trieste, 19·0; for Dayton, 20·0; for Turin and Glasgow, 24·0; for Milwaukee, Davenport, and Detroit, 26·0; for Cleveland, 27·0; for Boston and New Orleans, 28·0; for Moscow, Sydney, and Paris, 29·0; for Rome, 30·0; for St. Louis and Chicago, 31·0; for Philadelphia, 32·0; for Denver and San Francisco, 35·0; for Buffalo, 36·0; for Newport, Kentucky, 37·0; for Covington, 42·0; for Atlanta, 43·0; for Providence, 47·0; for Lawrence, Chattanooga, and Dublin, 48·0; for Baltimore and St. Petersburg, 49·0; for Cincinnati, 50·0; for Lowell, 55·0; for Pittsburgh, 56·0; for Prague, 57·0; for Knoxville, 59·0; for Milan, 62·0; for Washington, 71·0; for Louisville, 72·0; for Jersey City 76·0; for Alexandria, Egypt, 100·0; for Cairo, Egypt, 135·0.

It is not creditable to our cities to find from this compilation that, as the *Engineering News's* article puts it, in the whole first half of the list there are but eight American cities mentioned in a total of thirty-three, while in the last half there are, including Toronto, twenty-six in a total of thirty-three; moreover, that there is but one American city among the first sixteen, while all but four of the last sixteen are American. Verily, Jersey City, standing as it does next to Alexandria in typhoid-fever mortality, is in need of a better

water supply than it has at present. Only the North River separates New York with its mortality of 17·0 from Jersey City with one of 76·0. The lesson should be an easy one to learn.

MINOR PARAGRAPHS.

HANGING, FASTING, AND BURIAL AS AN EXHIBITION.

In the *British Medical Journal* for May 16th a correspondent writes that there is at present in Paris an exhibition of a hanging and fasting man which attracts large crowds. A man named Durand is attached by a cord to the ceiling; he is dressed in a blouse, with a red muffler round his neck. His head is bent toward his chest. His face is thin and bony and appears convulsed, his eyes are almost shut, his veins are swollen, and the complexion is ashen. The arms drop down at a little distance from the body; his hands are contracted and the fingers are bent. The veins are so swollen that they seem on the point of bursting. The legs hang straight and stiff. This barbarous spectacle, says the writer, is served up with an accompaniment of music. It is observed that when the music strikes up the hanging man is seized with painful convulsions. In this position he will remain for thirteen days; after that trial he will remain buried for a year, and will then take his place among the living. The rest Durand takes in his hanging position consists in leaning against a ladder which is placed in a position to permit him to doze without in the least changing his attitude. During this time he is rubbed with a sedative lotion and inhales ether. No food of any kind is taken.

THE ANTITOXINE TREATMENT OF DIPHTHERIA.

It was expected that the merits and demerits of the treatment would be thoroughly discussed at the last meeting of the Academy of Medicine. As it was, Dr. Coakley read his statistical paper, and then Dr. Winters presented the gospel of antantitoxine, so to speak, most energetically and at great length—at such length, indeed, that the night was far advanced when he ceased speaking, and the speakers who were to follow him found themselves constrained to reserve their fire, for the meeting felt that it was time to adjourn. At next week's meeting the proceedings will in all probability be in some respects quite as dramatic as a scientific discussion admits of. By that time the results of the American Pædiatric Society's collective investigation will be known. To judge from what is even now known of those results, they will probably be found a most effective weapon in the hands of the champions of the antitoxine treatment, for they will be based on observations made exclusively in private practice, and data of that sort have heretofore figured too little in the controversy.

VIVISECTION IN THE DISTRICT OF COLUMBIA.

The Medical Society of the State of Pennsylvania, at its recent annual meeting, adopted resolutions protesting against the passage by Congress of "a bill for the further prevention of cruelty to animals in the District of Columbia." The bill is a bad one, for if it becomes a law it will render the privilege of making necessary experiments on animals exceedingly difficult to obtain. Members of the medical profession resent the imputation that they are any less humane than the rest of the world, but it is not on this account alone that they oppose such fanatical and injurious legislation as that in question; they do not think it fair that in their efforts to prevent and cure disease they should be hampered by what would be very apt to amount to persecution.

A NEW EDITION OF THE *NATIONAL FORMULARY*.

The *National Formulary of Unofficial Preparations* is a most useful publication, for it is carefully prepared by a committee of the American Pharmaceutical Association. A new edition has recently been issued by the publishers of the *National Dispensatory*, in the form of a supplement to that work. This new edition contains four hundred and fifty-four formulas, nineteen more than were given in the old edition.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending May 26, 1896:

DISEASES.	Week ending May 19.		Week ending May 26.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus	0	0	0	0
Typhoid fever	6	0	6	0
Scarlet fever	75	4	101	12
Cerebro-spinal meningitis	3	2	3	4
Measles	280	18	389	19
Diphtheria	240	24	331	51
Tuberculosis	242	146	154	129
Small-pox	0	0	0	0

The American Orthopædic Association held its tenth annual meeting in Buffalo, on May 19th, 20th, and 21st. The attendance and interest were very gratifying and the average quality of the papers was excellent. Social features were luncheons given to the members by Dr. L. A. Weigel, of Rochester, and Dr. Bernard Bartow, of Buffalo, and a dinner at the Buffalo Club given by Dr. Roswell Park. The next meeting of the association will be held in Washington, in May, 1897, under the following officers: Dr. Samuel Ketel, of New York, president; Dr. Harry M. Sherman, of San Francisco, and Dr. Wisner R. Townsend, of New York, vice-presidents; Dr. E. G. Brackett, of Boston, treasurer; and Dr. John Ridlon, of Chicago, secretary.

The Buffalo Academy of Medicine.—At the last meeting of the Section in Obstetrics and Gynæcology, on Tuesday, the 26th inst., the following papers were to be read: Digestive Disturbances in Gynæcological and Obstetrical Cases, by Dr. A. L. Benedict; and Some Cases in Practice, by Dr. John J. Walsh.

The New York Post-graduate Medical School and Hospital.—Dr. Thomas E. Satterthwaite has been appointed a consulting physician to the hospital.

The Death of Professor Germain See, of Paris, is announced as having taken place on the 12th of May. He was seventy-eight years old.

Physicians' Summer Addresses.—Dr. J. H. Emerson (New York), Far Rockaway; Dr. Frederick Holme Wiggin (New York), Litchfield, Conn., from July until October.

Change of Address.—Dr. John Nevin, to No. 138 Mercer Street, Jersey City; Dr. C. A. Ritter, to Altman Block, Kansas City.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the three weeks ending May 23, 1896:*

Baldwin, L. B., Surgeon. Detached from the U. S. Steamer Cincinnati and ordered to the U. S. Steamer Newark.

Drake, N. H., Surgeon. Detached from the U. S. Steamer Franklin and ordered to the U. S. Steamer Cincinnati.

Kite, I. W., Passed Assistant Surgeon. Detached from the Naval Hospital, New York, and ordered to the U. S. Steamer Franklin.

Leach, P., Passed Assistant Surgeon. Detached from the Naval Hospital, New York.

Marmion, R. A., Medical Inspector. Detached from the U. S. Steamer Newark and ordered as a member of the Board of Inspection and Survey, June 3d, and as a member of the Medical Board, Navy Yard, Washington, D. C.

Van Reypen, W. K., Medical Director. Granted three months' leave of absence from June 3d, with permission to leave the United States.

De Valin, C. M., Assistant Surgeon. Detached from the Philadelphia Hospital and ordered to the Chelsea Hospital.

Shipp, E. M., Assistant Surgeon. Detached from the U. S. Steamer Vermont and ordered to the U. S. Steamer Monongahela.

Wilson, H. D., Assistant Surgeon. Ordered to an examination preliminary to promotion.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the Thirty Days ending May 15, 1896:*

Murray, R. D., Surgeon. Granted leave of absence for four days. April 30, 1896.

Hamilton, J. B., Surgeon. Granted leave of absence for fourteen days. April 21, 1896.

Stoner, G. W., Surgeon. Detailed to represent the service at the meeting of the American Medical Association at Atlanta, Ga., April 29, 1896.

Murray, R. D., Surgeon. To inspect quarantine ports on Gulf coast of Florida west of and including Appalachicola and the coasts of Alabama and Mississippi. May 1, 1896.

Bailhache, P. H., Surgeon. To inspect quarantine ports on the coasts of Connecticut, New York, and New Jersey, as far south as Sandy Hook. May 1, 1896.

Purviance, George, Surgeon. To inspect quarantine ports on coast of New Jersey south of Sandy Hook, and on Delaware Bay and River. May 1, 1896.

Sawtelle, H. W., Surgeon. To inspect quarantine ports on the coasts of Louisiana and Texas. May 1, 1896.

Austin, H. W., Surgeon. To inspect quarantine ports from northern port of Maine to extreme northern port of Rhode Island. May 1, 1896.

Stoner, George W., Surgeon. To inspect local quarantine station at Baltimore, Md. May 1, 1896.

Godfrey, John, Surgeon. To inspect quarantine ports on the coast of California. May 1, 1896.

Carter, H. R., Surgeon. To inspect Cape Charles Quarantine Station, and quarantine stations at Newport News, Norfolk, and Richmond, Va., and quarantine ports on the coasts of North and South Carolina, Georgia, Florida, and the coast east of Appalachicola, excluding Key West. May 1, 1896.

Peckham, C. T., Past Assistant Surgeon. To inspect quarantine ports on the coast of Washington, exclusive of ports on the Columbia River. May 1, 1896. Granted leave of absence for thirty days on account of sickness. May 15, 1896.

Wasdin, Eugene, Past Assistant Surgeon. Granted leave of absence for two days, from May 14, 1896. May 14, 1896.

Guiteras, G. M., Past Assistant Surgeon. To inspect local quarantine station at Key West, Fla. May 1, 1896.

Perry, J. C., Past Assistant Surgeon. To inspect quarantine ports on the coast of Oregon and the Columbia River. May 1, 1896.

Sprague, E. K., Assistant Surgeon. To proceed from Mobile, Ala., to Boston, Mass., for duty. May 1, 1896. To defer departure for Boston, Mass., until return of Surgeon Murray. May 6, 1896.

Cumming, H. S., Assistant Surgeon. To proceed to Norfolk, Va., for temporary duty. May 12, 1896.

Mathewson, H. S., Assistant Surgeon. When relieved at Boston, Mass., to proceed to San Francisco, Cal., for duty. May 1, 1896.

Boards Convened.

Board for physical examination of candidates for appointment in the Revenue Cutter Service:

At Philadelphia, Pa., Surgeon George Purviance, chairman, and Past Assistant Surgeon G. T. Vaughan, recorder, April 22, 1896.

At San Francisco, Cal., Surgeon John Godfrey, chairman, and Assistant Surgeon Rupert Blue, recorder, April 28, 1896.

At Washington, D. C., Past Assistant Surgeon C. E. Banks, chairman, and Assistant Surgeon W. J. S. Stewart, recorder.

To convene May 1, 1896.

Society Meetings for the Coming Week:

Monday, *June 1st:* New Hampshire Medical Society (first day—Concord); New York Academy of Sciences (Section in Biology); German Medical Society of the City of New York; Morrisania Medical Society, New York (private); New York Medico-surgical Society; Brooklyn Anatomical and Surgical Society (private); Corning, N. Y., Academy of Medicine; Utica, N. Y., Medical Library Association; Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., Medical Society; Chicago Medical Society; Cleveland Medical Library Association.

Tuesday, *June 2d:* Indian Territory Medical Association (first day—Wagoner); American Association of Genito-urinary Surgeons (first day—Atlantic City); New Hampshire Medical Society (second day); New York Neurological Society; New York Obstetrical Society (private); Buffalo Academy of Medicine (Section in Surgery); Elmira, N. Y., Academy of Medicine; Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Columbia (semi-annual—Chatham), Franklin (semi-annual), Herkimer (quarterly—Herkimer), Niagara (annual—Lockport), Saratoga (annual), and Yates (annual), New York; Hudson (Jersey City) and Warren (annual) County Medical Societies, New Jersey; Androscoggin, Me., County Medical Association (Lewiston); Baltimore Academy of Medicine; Medical Society of the University of Maryland (Baltimore).

Wednesday, *June 3d:* Ontario Medical Association (first day—Windsor); Maine Medical Association (first day—Portland); American Neurological Association (first day—Philadelphia); Indian Territory Medical Association (sec-

ond day); American Association of Genito-urinary Surgeons (second day); New York Academy of Medicine (Section in Public Health); Harlem Medical Association of the City of New York; Society of Alumni of Bellevue Hospital; Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond (Stapleton), N. Y.; Penobscot, Me., County Medical Society (Bangor); Orleans, Vt., County Medical Society (annual); Bridgeport, Conn., Medical Association.

Thursday, *June 4th:* Rhode Island Medical Society (first day—Providence); Michigan State Medical Society (first day—Mt. Clemens); Ontario Medical Association (second day); American Neurological Association (second day); American Association of Genito-urinary Surgeons (third day); Maine Medical Association (second day); New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua, N. Y.; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington); Cuyahoga, Ohio, Medical Society.

Friday, *June 5th:* Indiana State Medical Society (first day—Fort Wayne); Michigan State Medical Society (second day); American Neurological Association (third day); Baltimore Clinical Society.

Saturday, *June 6th:* Indiana State Medical Society (second day); Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society, New York (private); Miller's River, Mass., Medical Society.

Births, Marriages, and Deaths.

Married.

Mimmack—Farrington.—In Buffalo, on Wednesday, May 20th, Dr. Alfred E. Mimmack and Miss Maude E. Farrington.

Parker—Congdon.—In New Bedford, Massachusetts, on Tuesday, May 12th, Dr. Edward L. Parker, of Providence, Rhode Island, and Miss Mary E. Congdon.

Died.

Frost.—In Hanover, New Hampshire, on Sunday, May 24th, Dr. Carl Pennington Frost, dean of Dartmouth Medical College.

Gray.—In New York, on Tuesday, May 19th, Mary A, wife of Dr. Joseph F. Gray.

Moore.—In Selma, Alabama, on Tuesday, May 19th, Dr. C. B. Moore.

Pierson.—In Brooklyn, on Wednesday, May 20th, Harry M., son of Dr. W. H. Pierson.

Winslow.—In Providence, Rhode Island, on Friday, May 22d, Dr. B. H. Winslow, in the twenty-ninth year of his age.

Letters to the Editor

A PECULIAR CASE OF EPILEPSY.

410 Ashland Avenue, Buffalo, *May 11, 1896.*

To the Editor of the New York Medical Journal:

Sir: A short time since I ran across a peculiar case of epilepsy in my service at St. John's Church Dispensary, which may prove to be of some interest to the profession, so I take the liberty of offering it.

J. A., thirty-seven years of age, born in England, a house painter by trade.

Habits.—A moderate smoker; otherwise very temperate.

Family History.—His father died at forty, of intestinal obstruction, the cause of which I can not ascertain. His health had always been good.

His mother is still living at sixty-eight, robust and hearty. She describes the patient's birth as "easy," and accomplished without the aid of instruments. No history of nervous disorders can be found in the family.

The patient is the father of four healthy children.

Early History.—At six years of age the patient had scarlet fever, which left him a weakly child with impaired hearing.

Attack No. 1.—When he was seven years of age he was wheeling a wheelbarrow along the street, and, coming to an obstruction, attempted to push over it, but failed. The exertion, as he remembers it, was severe. Almost immediately, and without warning, he was seized with a convulsion, epileptoid in character.

Attack No. 2.—Seven years later, when he was fourteen years old, the patient was playing with some other boys one evening in September, when, coming to the front of a shop, he caught the glare from a reflector full in the eyes. He felt faint and clutched one of his companions, who threw him off, and he fell to the ground in a general convulsion.

Attack No. 3.—Four years later, during his eighteenth year, he had an attack during the night, and knew nothing of it until his room-mate spoke of it the next morning. This seizure came on in September.

Attack No. 4.—In September, 1888, thirteen years having elapsed since the last convulsion, the patient was walking along Main Street, of this city, worrying about money matters, when he was seized as before, without warning. The last thing he remembers was becoming conscious that the colored light from a drug store was shining full in his eyes.

Attack No. 5.—In September, 1889, the patient was attacked while talking with an acquaintance. Financial difficulties were worrying him, but otherwise he was feeling unusually well.

Attack No. 6.—In September, 1890, the seizure came after he had been eating freely of green corn, which he vomited after regaining consciousness. No other cause can be ascribed.

Attack No. 7.—Two days later an attack came on while he was taking a warm bath.

Attack No. 8.—In September, 1892, he was attacked while preparing for bed, and can ascribe it to no cause other than a disturbed condition of mind.

Attack No. 9.—On December 17, 1895, the patient was worrying about money which he could not collect, and was taken in the toilet room of a saloon. The day previous he had a severe headache, which is very uncommon for him.

From all accounts the convulsions are typical and severe. The patient regains consciousness quickly and feels no after-effects. He is able to resume his work in an hour or so.

It will be noted that the patient has had nine attacks during a period of thirty-one years. The longest interval was thirteen years and the shortest two days. Seven of the seizures have come on in September, one in December, and one probably in August. In two of the attacks the patient thinks that sudden flashes of light were the exciting causes.

It would seem that during the interval between the third and fourth attacks the patient had outgrown the habit, but

that a continually disturbed mind had succeeded in re-establishing it.

The patient's mental condition does not seem to be impaired in the slightest, and, while he is not physically robust, still he enjoys average health.

Though hastily prepared, I hope this account of the case may prove instructive and interesting.

ALMON H. COOKE, M. D.

ABDOMINAL SECTION PERFORMED ON AN INFANT.

No. 802 DAYTON BUILDING, MINNEAPOLIS, *April 25, 1896.*

To the Editor of the New York Medical Journal:

SIR: In response to the suggestion of Dr. Kelsey I wish to report the following case of laparotomy upon an infant. On January 23, 1896, Baby F., aged seven months, was brought to my office suffering from what proved to be an umbilical hernia. The child was very frail, weighing only twelve pounds. It had been born at seven months, and is said to have weighed but two pounds when born. Its umbilicus had always been moist and rather prominent. A few days before I saw it, it had been attacked with a severe cough, and the umbilical protuberance had gradually enlarged. Upon examination, a hernia about as large as the first two phalanges of my index finger presented. The surface was raw and congested and the child was very weak, constantly crying and straining, and gave symptoms of a strangulated hernia. A probe could be passed through the apex of the hernia into the abdominal cavity. The child was taken to my office operating-room and prepared for operation in the usual manner. At first we feared to give the little one chloroform, because he was so very frail. An incision was cautiously made through the outer wall of the hernia and gut found in the centre. The umbilical opening was enlarged above and below. The child screamed so that the intestines could not be controlled, and Dr. Cutts administered chloroform. We then found that the hernial sac was composed of what seemed to be the remains of the umbilical cord, and that the gut contained in it was a Meckel's diverticulum with an opening in its extremity. The diverticulum projected at a right angle from the small intestine and was about two inches and a half long. The child was in collapse, so that removal of the diverticulum could not be considered. I closed the opening in the gut with Lembert sutures of silk, returned the bowel, and closed the abdominal wound with silk sutures. The child was carried home in its mother's arms in a street car. Dr. Cutts attended it afterward, and it made an uninterrupted recovery.

JAMES E. MOORE, M. D.

Book Notices.

The Histopathology of the Diseases of the Skin. By Dr. P. G. UNNA. Translated from the German with the assistance of the Author by NORMAN WALKER, M. D., F. R. C. P. Ed., Assistant Physician in Dermatology to the Royal Infirmary, Edinburgh. With Double Colored Plate containing Nineteen Illustrations, and Forty-two Additional Illustrations in the Text. Edinburgh: William F. Clay. New York: Macmillan & Co., 1896. Pp. xxviii–1205. [Price, $10.50.]

THIS book is the translation of the work which appeared about a year ago in Germany as a part, and a very considerable one, of Orth's *System of Pathology*, although the fact is not mentioned in the English edition. The author mentions it, however, in his preface—the same as that of the German edition—and tells us the reason of his having written the book and the method he used. Since the classic work of Simon (1840) no text-book devoted to the pathological anatomy of the skin has been published. The recent Atlas of Leloir and Vidal, having the same object in view, contains fine plates showing the microscopial lesions of the principal skin diseases, with an accompanying text, but this work has, unfortunately, rested uncompleted. Unna, in his work, goes into the histology of all the diseases of the skin almost without exception. In determining to do this it was a question with the author whether to be content with simply repeating the different statements of the various dermatological text-books, to most of which the microscopical anatomy is merely an "ornamental addition," or, like Simon, to work once more through the whole of cutaneous pathology. He preferred to do the latter though incompletely, he says, and leave its amplification to the future, rather than give a mere dreary retrospect.

Dr. Unna has given us a great book; in its twelve hundred pages there is much that is valuable and there is considerable that is new. The author's reputation is so wide that it alone is sufficient to command attention and to make unnecessary a more extended notice than this, which in no sense purports to be a review. It is sufficient to say that the book will no doubt prove a valuable addition to the shelves of those who are working in the line of its subject matter.

The Methodical Examination of the Eye. Being Part I of a Guide to the Practice of Ophthalmology for Students and Practitioners. By WILLIAM LANG, F. R. C. S. Eng., Surgeon to the Royal London Ophthalmic Hospital, Moorfields, etc. London and New York: Longmans, Green, & Co., 1896. Pp. 96. [Price, $1.]

THIS book is intended as a guide to the functional examination of the eye for students and those beginning the study of the specialty. It is of necessity superficial, and especially so in the chapter devoted to vision, where some of the usual methods for the detection of astigmatism are almost ignored. In the portion devoted to the examination of the muscles, much that has recently been admitted to routine use in this country is conspicuous by its absence.

It is a little difficult to say what the function of this class of books really is, since they can not take the place of clinical instruction or practice, but possibly it is necessary for every successful clinical teacher to have his own book, however slightly his methods may differ from those of his neighbor; it is sometimes regrettable, however, as it exaggerates the importance of slight differences in practice, and as it diverts the attention of the teacher from more important lines of work. The typography is excellent. The large-print heading to each paragraph adds materially to the ease with which the student may refer to the subject at the clinic.

The Psychology of Attention. By TH. RIBOT, Professor of Comparative and Experimental Psychology in the Collège de France. Authorized Translation. Third Revised Edition. Chicago: The Open Court Publishing Company, 1896. Pp. viii–120. [Price, 75 cents.]

THIS essay deals wholly with the mechanism of attention. Beginning with the spontaneous form, which is caused by emotional states and is the true, fundamental, and primitive form, the author passes to voluntary attention, and final-

ly, without entering the field of psychiatry, discusses briefly the morbid states of attention. The assertion that the mechanism of attention is essentially motor—that is, always acting upon and through the muscles, mainly under the form of inhibition—is supported by convincing evidence and argument. Most psychologists have overlooked the importance of spontaneous attention and its causation. It is stated that any man or animal hypothetically incapable of experiencing either pleasure or pain would be incapable of attention. It is not the relative strength of a certain state, not the intensity of the impression alone, that acts, but our adaptation or convergence. Our tendencies, as they happen to be crossed or satisfied, causing pleasure or pain—and this epitomizes our emotional life—these are the bases of attention. Tendencies are fundamentally movements or arrested movements; therefore attention, both spontaneous and voluntary, is from its origin bound up in motor conditions.

The physical aspect of the subject is considered and so are the limited contributions of physiology, but the path of the physiological psychologist is not easy, and conclusions are sometimes drawn from premises which the physiologist may still consider hypothetical. Interesting results of psychometrical observations are given, showing the varying activity of voluntary attention in different physical and mental states.

The morbid states of attention are treated of briefly, but with unusual clearness and simplicity of language and classification. The author disclaims the intention of entering the field of psychiatry, but his psychological standpoint forms a complement to the study of the pathology of the subject. The citation of numerous instances adds much to the interest of the work. The book is admirably translated and well printed.

Like the others of this series that have come to our notice, it is well worth the perusal of all thoughtful readers.

Fear. By Angelo Mosso. Translated from the Fifth Edition of the Italian by E. Lough and F. Kiesow. Authorized Translation. London, New York, and Bombay: Longmans, Green, & Co., 1896. Pp. 278.

The author classes himself among the "popularizers of science," and it is as a popular treatise on emotional manifestations that his book must be considered. As such, it is interesting and at times striking. There are in it original thoughts, and signs of industry and careful work, but the methods of examination are not given, and results which might be interesting if stated with precision are subordinated to the general impressions and reflections of the author.

When issue is taken with Darwin and Spencer, although in some instances the author's position is plausible, his treatment of his opponents is too summary to be convincing. Mosso's work on the circulation of the brain, by means of delicate apparatus to determine the increased weight of that organ during psychical work, is interesting; his records of the pulsation of the brain also show that that organ responds to sensory stimuli by functional activity during sleep.

The æsthetic aspect of the subject is considered at some length, and the vivid descriptions and instantaneous photographs of the expressions of pain and fear may be of considerable interest to artists and writers in search of the realistic. The work of the translators is by no means faultless; that of the publishers is well done.

BOOKS, ETC., RECEIVED.

The Indications and Modes of Drainage after Abdominal and Vaginal Section. By Nicholas Senn, M. D., Chicago. [Reprinted from the *American Gynæcological and Obstetrical Journal.*]

Pompeian Surgery and Surgical Instruments. By Nicholas Senn, M. D. [Reprinted from the *Medical News.*]

Lectures on Pharmacology for Practitioners and Students. By Dr. C. Binz, Director of the Pharmacological Institute in the University of Bonn. Translated from the Second German Edition by Arthur C. Latham, M. A., M. B. Oxon., M. A. Cantab., Radcliffe Traveling Fellow in the University of Oxford. Volume I. London: The New Sydenham Society, 1895. Pp. vi–389.

Nouveaux éléments d'ophthalmologie. Par H. Truc, professeur de clinique ophthalmologique à la Faculté de Montpellier, et E. Valude, médecin de la clinique ophthalmologique nationale des Quinze-vingts. Tome premier. Avec 149 figures et une planche en couleurs. Paris: A. Maloine, 1896. Pp. viii–604.

Transactions of the Obstetrical Society of London. Volume XXXVIII. For the Year 1896. Part I, for January and February.

The Treatment of Dipsomania, Morphinomania, and Onanism by Hypnotism. By Thomas B. Keyes, M. D., Chicago. [Reprinted from the *Journal of Materia Medica.*]

A Case exhibiting Bilateral Palsy of the Superior Rectus Muscle, the Iris, and the Ciliary Muscle, with Loss of Power of Convergence. By Frank H. Edsall, M. D., and Theodore Diller, M. D., of Pittsburgh. [Reprinted from the *Annals of Ophthalmology and Otology.*]

Amœbic Catarrh of the Intestinal Tract. By A. A. Young, M. D., Newark, N. Y. [Reprinted from the *Buffalo Medical Journal.*]

Ophthalmia Neonatorum. By William Cheatham, M. D., Louisville, Ky. [Reprinted from *Pædiatrics.*]

Miscellany.

The Second Pan-American Medical Congress.—The special regulations for the congress, which is to be held in the City of Mexico on the 16th, 17th, 18th, and 19th of November, 1896, are as follows:

Enrollment.—Art. 1. In order to be properly enrolled, each member of the congress will pay to the treasurer thereof in the City of Mexico, the sum of five dollars, gold.

General Sessions.—Art. 2. There will be one opening, one closing, and one intermediate session of a purely scientific character.

Art. 3. The opening session, which will be of a solemn character and presided over by the supreme authority of the nation, besides being attended by the members of the congress, will also be attended by the members of scientific societies and other distinguished persons who may be invited. The session will be opened with the report of the general secretary. This will be followed by a speech of welcome, pronounced by the president of the congress.

Two members will then speak on scientific subjects, and they will be followed by a speech from the President of the Republic. It is strongly recommended that the scientific speeches should be of short duration. The intervals between the speeches will be filled up with musical performances.

Art. 4. At the closing session, the general secretary will specify the place designated by the congress for holding the third meeting.

Art. 5. The treasurer will present his accounts to the congress, showing the disbursements made of the funds intrusted to his care.

Art. 6. A scientific speech will be delivered and a short speech by one representative of each one of the nations represented in the congress.

Art. 7. In the intermediate session, four speeches will be delivered on general matters, by persons who are highly distinguished in medical science and who, having been invited to do so, have accepted the commission; one of these speeches to be pronounced by a Mexican physician, who shall be invited to do so by the committee of management.

Art. 8. No discussions will be held in the general sessions.

Sessions of the Sections.—Art. 9. These sessions will be held from 9 to 12 A. M. and from 3 to 5 P. M., in the places that may be designated by the organizing committee. They shall be presided over by the president of each section, alternating with the vice-presidents of each one of the nations that are represented in the respective sections.

Art. 10. The persons who may be appointed by the committee of organization will be the *ex-officio* secretaries of the sections, and each will fill his post alternately with the secretaries of the nations that may be represented in the sections; but should the latter not be present, their places will be supplied by the president in office.

Art. 11. The president will direct the discussion in accordance with the order of the day, and will decide all questions that may arise and that may not be provided for in these regulations.

Art. 12. The *ex-officio* secretary will make out the minutes, and for that purpose, besides his own notes, will collect those of the secretaries who may have acted in the section. He will also collect from the persons who may have spoken the written extracts referred to in Art. 19.

Art. 13. All questions relating to the debates which are not provided for in these regulations will be decided in accordance with general parliamentary practice.

Art. 14. The voting will be by name or by putting the question.

Papers, Abstracts thereof, and Discussions in the Sessions of the Sections.—Art. 15. All papers shall be presented in writing.

Art. 16. Each author will forward to the secretary of the organizing committee in the City of Mexico, and before the first day of August of the present year, an abstract not exceeding 300 words, of the paper to be presented by him. These abstracts will be printed in English, French, and Spanish, and will be distributed to the members of the congress, before the session in which they are to be read.

Art. 17. No paper will be announced which is not accompanied by this abstract; but the authors who comply with these conditions will have a right to have their work published intact in the *Transactions* of the congress.

Art. 18. The reading of the papers in the sessions must not last more than twenty minutes; when the papers are so long that they can not be read within that time, the authors will give extracts from them, either in writing or by speech; but they will be published intact in the *Transactions* of the congress and in the language in which they have been written.

Art. 19. The abstracts referred to in the preceding article will be delivered, at the same time as the papers, to the secretary of the section to which they pertain.

Art. 20. The members of the congress who may take part in the discussions in any section will present their speeches in writing at the termination of the sessions to the respective secretaries of such sections, and they will also be published in the *Transactions*.

Art. 21. The papers which have been announced for reading in the order of the day in each section will serve as subjects for discussion. In such discussions, no speaker will be allowed to speak more than once and not for more than five minutes; but the author of the paper under discussion will be allowed to reply, if he considers it necessary, in a single speech, which shall not go beyond ten minutes.

Auxiliary Committees in the Mexican Republic.—Art. 22. These committees will be appointed by the committee of organization and will be composed of one member for each local medical society, or, in their absence, of one physician for every centre of population. They will co-operate with the committee of organization in promoting the success of the congress. Said committees will be appointed during the early months of the present year.

The Executive Committee.—Art. 23. In order to form this committee, the organizing committee will appoint seven members, including the president, the secretary, the treasurer, and the Mexican representative in the international executive committee, and such members will attend to everything relating to the business of the congress, in accordance with the regulations that they may adopt for that purpose.

The American Association of Genito-urinary Surgeons.—The tenth annual meeting will be held in Atlantic City, on Tuesday and Wednesday, June 2d and 3d, under the presidency of Dr. Claudius M. Mastin, of Mobile. The following titles are included in the programme: On Resection of the Kidney—A Suggestion for a New Method of Applying Sutures in the Operation of Nephrorrhaphy, by Dr. Francis S. Watson, of Boston; The Treatment of Rupture of the Urethra by Suture of the Canal, by Dr. A. T. Cabot, of Boston; A Report of Two Cases of Urethrectomy with Transplantation for Urethral Strictures, by Dr. John P. Bryson, of St. Louis; Good Results following Urethral Resection, by Dr. Eugene Fuller, of New York; Post-conceptional Syphilis, by Dr. Abner Post, of Boston; Clinical and Pathological Notes on Syphilis, by Dr. John A. Fordyce, of New York; Two Cases of Urethral Chancre with Unusual Secondary Symptoms, by Dr. James P. Tuttle, of New York; A Report with Illustrations of an Interesting Case of Pseudo-hermaphroditism, by Dr. Bransford Lewis, of St. Louis; Operative Interference in Aggravated Instances of Seminal Vesiculitis, by Dr. Eugene Fuller, of New York; Spermato-cystotomy for Chronic Vesiculitis, with Notes of Two Cases, by Dr. William T. Belfield, of Chicago; Renal Tuberculosis, by Dr. F. Tilden Brown, of New York; Outlines of Non-obstructive Ischuria, by Dr. Alexander W. Stein, of New York; Clinical and Pathological Observations on Castration for Prostatic Overgrowth, and Prostatectomy on a Monorchid, with Microscopic Sections, by Dr. John P. Bryson, of St. Louis; The Duration of Acute Gonorrhœa, by Dr. H. M. Christian, of Philadelphia; The Treatment of Gonorrhœa, by Dr. W. Frank Glenn, of Nashville; and A New Remedy in Chronic Urethritis, and A Note on the Correlation of Inflammations of the Urinary Tract with Lithæmia, Oxaluria, etc., by Dr. Bransford Lewis, of St. Louis. Dr. Lewis will also exhibit a syringe for use in infiltration anæsthesia.

The German Medical Society of the City of New York.—At the next meeting, on Monday evening, June 1st, Dr. J. A. Beuermann is to read a paper on The Diagnosis between Benign Lymphomyxoma and Malignant Lymphomyeloma (to be discussed by Dr. L. Heitzmann and others), and Dr. S. Pollitzer will read one on The Nature and Treatment of

Eczema (to be discussed by Dr. H. G. Klotz, Dr. J. Adler, Dr. F. J. Leviseur, Dr. L. Weiss, Dr. A. Pisko, Dr. J. P. Oberndörfer, and others).

The Beaumont Crutch.—Captain Beaumont's "anti-paralysis crutch" is a device that ought to be better known in this country. The inventor, in his service both in the British and in the United States armies, has noted appliances used on the field and in the hospitals with a view to possibly simplify, lighten, or improve them. British orthopædists have generally adopted this form of crutch, and have also approved of the stretcher for its lightness, cheapness, and portability. What is known as "crutch paralysis" or palsy is caused by the pressure of the cross piece which goes under the arm, for much of the weight of the body presses upon the brachial plexus. The crutch hitherto generally used, whether the straight single stick or the split or French crutch, requires to be held at an angle from the side of the body in order to enable the hand to obtain a grasp, thus giving rise to a semicircular sweep and, consequently, a rolling movement under the arm. When the handle is placed on the outer side of the stick it is brought close to the body, thus minimizing the to-and-fro movement. This movement under the arm is entirely done away with by the use of a hinged or swivel top which regulates the movement of the stick to the exact length of step. The top piece is made half-moon shaped to act as a saddle for the arm, and it is either padded, made of cork, or furnished with a pneumatic cushion. When this movable top is not used a fixed top is screwed upon the stick or shank. This renders the crutches very portable, for the tops can be readily removed and placed in a bag and the two sticks tied together. In transportation this is of value, as the crutches occupy much less space, and it is impossible to loosen or break the tops. This arrangement is valuable for naval or military purposes. As the tops are half-moon shaped, they fit one into the other, so no space is lost.

In cases of hip disease in children, where the shortening of the leg is generally the result, this system of a movable handle or support is valuable, for during the period of growth it can simply be taken off and easily replaced upon a longer stick or shank. It is of vital importance that the crutch should be exactly long enough to prevent bending the back and so contracting the chest. To prevent the pressure under the arm, the handle or support should be at such a height as to make the weight of the body so borne as not to induce stooping, and unless the handle is movable this result can not be exactly obtained.

If a piece is added to the stick or shank, the handle or support must be forced up to such a height that the arm can not have the advantage of straightening out and so exercising its full power in supporting the weight of the body. There is also an objection to the support being too low, for when the hand can not properly grasp the handle, all the weight must be upon the top, thus causing pain, injury, and possibly paralysis.

When crutches are bought they are frequently ordered to be so many inches long, taking a standard length of arm or reach, which is not correct, as there is no fixed length of arm in proportion to the height, and the two arms are not always of the same length. With the single stick, however, this is different, for it can be cut off to the exact length required, and the handles applied and elevated or lowered to any height. If the patient is in bed, the exact measurement can be also obtained. The London hospitals always have a stock of crutches and handles, and when they are wanted he nurses cut the sticks to the required length and apply the handles in accordance with the height of the patient. These crutches are given to the patients, who place a deposit on the handles, which are returned to the hospitals when they are no longer required.

In order to prevent the stick from wearing down, a small ring or ferule made of aluminum alloy, which holds a rubber pad, is screwed to the bottom of the stick. This ferule is very light. The pneumatic-cushion top can be covered with kid of any color. The handles are made of aluminum alloy and are covered with cork and Russia leather where the hand grasps them. The crutches are made in two grades. Bamboo is sometimes used, for it lends itself to the single stick and simplifies the application of the hinged-top principle. The alloy used contains about six per cent. of copper, which does not add to the weight, become discolored, or cause any discoloration. It takes and retains a high polish, and can be gilded. For a cheap hospital crutch, spruce is used, for the stick, and willow for the top; the handles can be made of malleable iron. No tools are required to place the handle upon the stick, as the mode of attaching it is automatic. This crutch, we understand, has had the highest approval of the orthopædic physicians who have seen it.

The Hoffa Abdominal Supporter.—Dr. Albert Hoffa, of Würzburg, contributes to the *Centralblatt für Chirurgie* for May 16th an article in which he first deals with the matter of trusses for inguinal and femoral hernia. He describes and figures a truss which, with the help of an intelligent patient, he has himself devised. We can not see that it differs materially from trusses that have been in use in the United States for many years now, so we shall pass over the first portion of Dr. Hoffa's article without further remark, and proceed to that part of it which treats of abdominal supporters, appliances, it must be confessed, that are not usually so effective as the better hernia trusses are.

One of the chief defects of most abdominal supporters, says Dr. Hoffa, is that they are apt to slip upward when the patient moves about, and the troublesome perineal band has to be worn to counteract this tendency; moreover, the majority of these appliances make pressure downward instead of upward—in other words, they simply compress and do not support. To do away with these defects, Dr. Hoffa has devised a supporter which he says works faultlessly; he reports that he has employed it with perfect success in the severest cases of pendulous abdomen, large ventral and umbilical hernias, and floating kidney—in short, in all conditions calling for the use of an abdominal supporter. It somewhat resembles the lower portion of his scoliosis corset, reaching up to the waist. The material is cut and sewed together so as to fit the individual, but for its upper half, in the anterior median line, it is not stitched, but left open to be laced together. It is strengthened by two steel strips, one on each side of the median line, curved to fit the form. In cases of pendulous abdomen these strips are so curved in at the lower end as to support the flabby abdominal wall. The supporter takes its hold on the body mainly by means of a curved metallic strip which, starting from just above the ramus of the pubic bone on each side, runs upward over the crest of the ilium and then almost straight in a downward direction to the lower border of the supporter, which is only a little above the gluteal fold, or, as the author expresses it, about a hand's breadth above the tuberosity of the ischium. The whole is laced together in the median line behind. In each lateral portion, on the hip, there is a large triangular opening, and that portion of the corset that forms the lower boundary of this opening is not continuous with the posterior portion,

but is laced to it in the form of a broad strap. The curved metallic strip that skirts the outline of the pelvis is made of spring-steel modeled after one made of an alloy of two parts of lead and one part of zinc; this alloy, in a sheet three millimetres thick, may be cut to the proper shape with a sharp knife, according to a paper pattern previously prepared. The metallic strip is readily molded to fit the outline of the hip, but yet is rigid enough to keep its shape while it is being transported to a workman, who reproduces it in steel.

Sanoform, a New Substitute for Iodoform.—Dr. Alfred Arnheim, of Berlin (*Allg. med. Ctrlztg.*, 1896, No. 37; *Dtsch. Med.-Ztg.*, May 14, 1896), says that sanoform was brought into notice by Dr. Courant and Dr. Gallinek in 1895, and has been experimented with by Dr. Lohnstein. Chemically, it is said to be a diiodo-salicylic-acid methyl ether having the formula $C_6H_2\begin{cases}COOCH_3\\OH\\I_2\end{cases}$. It contains 62·7 per cent. of iodine and occurs in white needles that are entirely odorless and tasteless. It is moderately soluble in alcohol and readily soluble in ether and in vaseline, so that it is suitable for use in medicating gauze, collodion, and vaseline. Its melting point is above the temperature required for sterilizing gauze. It is said to be not at all poisonous. The author mentions its having been used as a substitute for iodoform in seventy-two cases, consisting of twenty-two of soft chancre, twenty of hard chancre (sometimes together with mercurial treatment, sometimes before it), six of bubo, sixteen of phimosis, three of wounds from the excision of ulcers, and five of paronychia or the after-treatment of open abscesses. The pure powder was dusted on to the ulcerous surfaces, and after the suppuration had been checked a ten-per-cent. ointment was applied. The same course was followed in the treatment of fresh wounds. In general, the improvement was comparatively rapid. In a few of the cases of soft chancre, and especially in almost all of those in which the prepuce had to be cut, the rapidity of the healing process was striking. There were instances, however, in which the morbid condition followed its usual course of two, three, or four weeks. Sanoform is inferior to iodoform as a healing agent, but has the advantages of its freedom from odor and its perfectly non-poisonous character. It is not more expensive than iodoform. It is made at the Höchst dye-works formerly known as Meister, Lucius, & Brüning's.

Tetanus Antitoxine.—The following circular, dated May 19th, has been issued by the city board of health:

"The New York City Health Department is prepared to furnish antitoxic serum for the treatment of tetanus. Each vial contains twenty cubic centimetres of serum, having an immunizing power of one to three million—*i. e.*, one cubic centimetre of serum protects three million grammes of guinea-pigs in weight from a fatal dose of tetanus toxine. The average initial dose of the serum varies with the age of the patient, the gravity of the case, and the time when treatment is begun.

"The remedy is administered by deep hypodermic injections, a large syringe (such as has been employed for diphtheria antitoxine) being preferably employed for the purpose, although an ordinary hypodermic syringe carefully cleaned may be used, the barrel of the syringe being repeatedly filled. Some point on the anterior surface of the body should be chosen for the injection, where there is an abundance of subcutaneous cellular tissue, such as the anterior surface of the abdomen or thorax, or the outer surface of the thigh. Before the remedy is administered the skin should be carefully washed with alcohol or some disinfecting solution, and the syringe carefully sterilized and then washed with sterilized water. The solution is rapidly absorbed, and it is better not to employ massage over the point of injection.

"*It is of vital importance in tetanus that the antitoxine be administered at the earliest possible moment, as the dose required to neutralize the tetanus toxine absorbed increases with great rapidity with each hour's delay.*

"When the treatment is begun at the first appearance of tetanic symptoms, and they do not point to a very severe infection, and especially when the incubation period has been long—*e. g.*, two weeks—one vial, or twenty cubic centimetres, may suffice for the first injection, and, according to the results, one half the quantity or the same quantity should be repeated at intervals of from six to twelve hours during the four following days.

"If the infection is intense, as shown by a short incubation period—*e. g.*, five to eight days—or by the rapid development of the tetanic symptoms, and by the predominance and intensity of bulbar phenomena, or, if the treatment is begun several days after the appearance of the tetanic symptoms, even if at the time of injection they are not severe, the contents of one vial should be at once injected, and the dose repeated at short intervals, according to the effect produced on the tetanic symptoms.

"The doses required where the wound has been previously untreated, even if the symptoms are slight, are usually large. The dose for children under twelve should be one half or less that for an adult. The use of tetanus antitoxine does not preclude the employment of other remedies, such as chloral, the bromides, physostigmine, or morphine. Some one or more of these remedies should be employed in full doses. It is also thought to be advantageous to give large amounts of water to the patient for its diuretic effect, as the tetanus toxine is eliminated by the kidneys.

"Where tetanus follows some wound of the surface, this should be treated freely with some preparation of iodine in solution to destroy the toxines in it. The ordinary antiseptic solutions, such as carbolic acid and bichloride of mercury, are of little value for this purpose.

"The exact value of tetanus antitoxine in the treatment of this disease, and the best method of administration, have not been fully determined, and the health department of the city of New York specially requests that all persons using this preparation of antitoxic serum will forward a full report to the department of the case and the results of treatment.

"All public institutions in New York city, on application, will be furnished with tetanus antitoxine free of charge.

"Address—The Bacteriological Laboratories, Health Department, Criminal Court Building, Centre, Elm, White, and Franklin Streets.

"Telephone, '446 Franklin.'"

The Ontario Medical Association.—The sixteenth annual meeting will be held in Windsor, on June 3d and 4th, under the presidency of Dr. F. Le M. Crasett, of Toronto. The programme includes the following titles: Absorbable Ligatures in Abdominal Surgery, by Dr. M. D. Mann, of Buffalo; The Treatment of Phthisis, by Dr. W. B. Geikie and Dr. W. B. Thistle, of Toronto, and Dr. G. Hodge, of London; The Operative Treatment of Mammary Carcinoma, by Dr. W. Burt, of Paris, Dr. A. B. Welford, of Woodstock, and Dr. G. T. McKeough, of Chatham; The Treatment of Puerperal Sepsis, by Dr. H. T. Machell, of Toronto, Dr. G. Acheson, of Galt, and

Dr. H. Meek, of London; Diphtheria, by Dr. C. R. Charteris, of Chatham; My Experience with Antitoxine in the Treatment of Diphtheria, by Dr. W. C. Gilchrist, of Orillia; The Rational Treatment of Typhoid Fever, by Dr. J. P. Armour, of St. Catherine's; The Diagnosis of Typhoid Fever, by Dr. G. R. Cruickshanks, of Windsor; The Tongue-like Lobes of the Liver, by Dr. A. McPhedran, of Toronto; The Total Stamping Out of Transmissible Diseases, by Dr. A. Groves, of Fergus; Hæmoptysis, by Dr. J. M. Cotton, of Lambton Mills; Phthisis as a Factor in the Causation of Insanity, by Dr. E. H. Stafford, of Toronto; Neurasthenia, by Dr. E. E. Harvey, of Norwich; Broncho-pneumonia, by Dr. A. E. Harvey, of Wyoming; Strange Cases in Practice, by Dr. T. Sparks, of St. Mary's; Skin-grafting, by Dr. R. Whiteman, of Shakespeare; The Röntgen Rays in Surgery, by Dr. E. E. King and Dr. N. A. Powell, of Toronto; The Conservative Surgery of the Eye, by Dr. R. A. Reeve, of Toronto; A Report of Surgical Cases, by Dr. T. K. Holmes, of Chatham; Movable Kidney, and Another Way of Anchoring it, by Dr. F. B. Wilkinson, of Sarnia; Mixed Infections, by Dr. J. Caven, of Toronto; Occipito-posterior Presentations, by Dr. A. A. Macdonald, of Toronto; Missed Abortion, by Dr. F. R. Eccles, of London; The Treatment of Abortions, by Dr. G. McKeough, of Chatham; Mitral Disease in Pregnancy, by Dr. C. J. O. Hastings, of Toronto; Pregnancy Complicated with Retroversion, with a Report of a Case, by Dr. Alexander Bethune, of Seaforth; The Preservation of the Perinæum in Labor, by Dr. C. B. Oliver, of Merlin; and Glioma of the Brain, by Dr. A. J. Johnson, of Toronto. Other papers will be read by Dr. V. C. Vaughan, of Ann Arbor, Michigan, and Dr. W. F. Chappell, of New York. Dr. H. Crawford Scadding, of Toronto, will exhibit an apparatus for the combined administration of nitrous oxide and oxygen. Dr. Frederic Hewitt's apparatus for the administration of nitrous oxide gas and ether will also be exhibited.

The Treatment of Submammary Intercostal Neuralgia connected with Uterine Affections.—The *Revue international de médecine et de chirurgie* for May 10th contains the following formulas which are attributed to M. Jules Chéron:

℞ Tincture of gelsemium..... 100 drops;
Syrup..... 600 grains;
Distilled water..... 8 ounces.

M. From three to five dessertspoonfuls are to be taken in the course of a day, half an hour before eating or three hours afterward. This amount will contain from fifteen to twenty drops of the tincture of gelsemium, and it should not be exceeded.

If there are very painful spots along the intercostal nerve, they should be touched every two days with the following mixture:

℞ Tincture of iodine..... 450 grains;
Morphine sulphate..... 15 "
M.

Consanguineous Marriages.—In an article on this subject in the *Journal des praticiens* for May 9th, the writer remarks that the results of these marriages have been differently regarded by various authors. Esquirol attributed to them a predisposition to insanity among the descendants. Menière affirms that in the majority of cases deaf-mutes owe their infirmity to the ties of relationship between their parents. Lucas thinks that these marriages are a cause of degeneration in the human race; that they produce mental dullness, brutality, insanity, impotence, etc. Liebreich states that consanguinity is frequently the cause of pigmentary retinitis among the descendants. Raynaud ranks consanguinity among the conditions which may produce albinism. Luys seemed to have proved also, says the writer, the injurious influence of consanguineous marriages.

On the other hand, says the writer, others have boldly declared themselves in favor of these marriages, and state that they are not at all injurious, that generally they give good results. It is not astonishing, then, he says, that in the face of such extreme opinions other authors, such as Lévy, Bouchardat, Voisin, Darwin, Lacassagne, Ballet, and others, should view the question from both sides and affirm that these marriages are productive of both good and evil results, according to whether the contracting parties are exempt from or affected with constitutional diseases. With such a diversity of opinions, continues the writer, it is difficult for physicians to decide when they are consulted by patients in regard to the subject.

M. Perrin recently made a study of the question under consideration, and gives his conclusions as follows: First of all, among the numerous affections attributed to marriages of consanguinity, idiocy, insanity, and epilepsy are due generally to heredity, but in a few cases consanguinity of the parents may certainly be the cause. As to convulsions in the young, the cases are so numerous that it is impossible to attribute this affection to the influence of consanguinity. It may have a share in the production of deaf-mutes, but it is not an invariable factor. With regard to affections of the sight, the influence exercised by consanguinity has been ascertained, and in albinism it has been distinctly proved. Concerning sterility, M. Perrin thinks this can not be attributed to consanguinity alone. He has further shown that certain congenital deformities have been so frequently observed in children whose parents were perfectly healthy that, in these cases, we are forced to admit the theory of consanguinity alone.

On the whole, says the writer, we may conclude that if under certain circumstances consanguinity and heredity are two ætiological factors which combine in the same family to bring about the same morbid results, it is none the less true that in some cases consanguineous marriages among healthy persons may exercise an unfavorable influence on the children.

M. Perrin, says the writer, advises physicians not to dissuade their patients from marriage if there is no diathesis, no hereditary disease, and if they are in good health and have a strong constitution; on the other hand, it is not well to encourage them, he says, because even in the best conditions the children of such marriages have presented irremediable defects. But if the physician discovers the least trace of physical or mental affection, he should exert all his influence to prevent such marriages, for they could only be productive of deplorable results.

A Contribution to the Study of the Glycero-phosphates.—In the *Nouveaux remèdes* for April 24th M. G. Delage gives a detailed account of the preparation of the glycero-phosphates and of their employment in general practice.

According to M. Robin, he says, they may be administered in subcutaneous injections or by the mouth. The solutions should be prepared with the greatest care and in an antiseptic manner; only small quantities should be made at a time, and they should be preserved in sterilized bottles large enough to hold only a sufficient amount for one injection. M. Delage insists upon these precautions because the glycero-phosphate solutions become contaminated very easily and are excellent culture media for numerous microbes.

The injections also should be performed in the most care-

ful manner and with the usual antiseptic precautions. The author states that, owing to the careful observance of these rules, he has never observed an abscess or the least trace of inflammation follow the injections. The regions for the injections are preferably the limbs and the back.

The glycero-phosphates, to be given by the mouth, may be prescribed under the form of capsules, pills, or syrup. The doses for the calcium, sodium, potassium, and magnesium salts are from five to fifteen grains a day, given preferably during the meals; for glycero-phosphate of iron, from three hundred to four hundred and fifty grains a day. It is nearly always beneficial, says M. Delage, not only to associate the different glycero-phosphates, but to add other drugs which have a similar action on nutrition. For this reason, he says, he makes use of kola and the strychnine preparations. The following solution is one which has given him good results:

℞ Glycero-phosphate of calcium		90 grains;
" " " sodium,	each	30 "
" " " potassium,		
" " " magnesium,		
" " " iron,		
Pepsin		45 "
Maltine		15 "
Tincture of kola		150 "
Tincture of ignatia		30 drops;
Syrup of cherries, enough to make		6 ounces.

M. A dessertspoonful of this mixture is to be taken during breakfast and dinner.

The following prescription is also recommended by M. Delage, who frequently substitutes it for the syrup:

℞ Glycero-phosphate of calcium	5 grains;
" " " magnesium	1·75 grain;
" " " iron	0·9 "
Powdered ignatia	0·5 "
Maltine	0·9 "
Pepsin	2·9 grains.

M. This quantity is for one capsule, and the dose is a capsule taken at breakfast and dinner.

M. Delage considers glycero-phosphate of iron the best chalybeate which can be recommended in the treatment of chlorosis and in anæmia with insufficiency of the oxidation of nitrogenous food.

It is preferable, he says, given in the form of pills, as follows:

℞ Glycero-phosphate of iron	from 0·9 grain to 1·75 grain;
Powdered rhubarb	0·9 "
Extract of cinchona	2·9 grains.

M. This is for one pill; three such pills are to be taken during the day, one at each meal.

In order to obtain the best results from the use of the glycero-phosphates, says M. Delage, active products should be employed in their preparations. The commercial preparations put on the market do not, he says, give complete satisfaction, and he advises physicians to have their own formulas filled out by reliable pharmacists.

The Wisconsin State Medical Society.—The fiftieth annual meeting will be held in Madison, on June 3d, 4th, and 5th, under the presidency of Dr. Frank W. Epley. The preliminary programme includes the following titles: The president's address, by Dr. Frank W. Epley; The Hygiene of the Physician Himself, by Dr. H. B. Tanner, of Kaukauna; The Hygiene of Public Conveyances, by Dr. J. F. Pritchard, of Manitowoc; Prophylactic Measures for the Operating Room in Private Houses, by Dr. C. W. Oviatt, of Oshkosh; The Irregular Treatment of Cancer, by Dr. A. J. Burgess, of Milwaukee; The Hygiene and Prophylaxis of Wounds of the Scalp, by Dr. Charles H. Rodi, of Calumet, Mich.; The Prophylaxis of Urethral Strictures in Gonorrhœa, by Dr. J. F. Doyle, of Green Bay; Practical Points in the Hygiene and Treatment after Operations on the Kidney, by Dr. H. M. Brown, of Milwaukee; Prophylaxis as applied to the Preservation of Function in Wounds of the Nerves and Tendons, by Dr. W. H. Earles, of Milwaukee; The Hygiene of Obstetrics: Adolescence—the First Year of Wedded Life—Menstruation—Pregnancy and the Childbearing Period—the Puerperium, by Dr. A. J. Puls and Dr. S. W. French, of Milwaukee; Fruit as Sold in the Open Market, by Dr. W. B. Hill, of Milwaukee; A Pure Milk Supply, and the Methods of Obtaining it, by Dr. F. C. Gillan, of Milwaukee; Diet as a Prophylactic of Alimentary Diseases in Children, by Dr. F. Sweemer, of Milwaukee; The Excessive Use of Starchy Food as a Cause of Indigestion, by Dr. Byron O. Wobles, of Milwaukee; The Hygiene of the Alimentary Canal, by Dr. A. Anderson, of Superior; The Care of the Mouth, by Dr. V. A. Gudex, of Milwaukee; Improper Feeding as a Cause of Lithiasis, by Dr. W. H. Neilson, of Milwaukee; The Rights of the Individual and of the Public in the Matter of Quarantine, by Dr. W. H. Washburn, of Milwaukee; Local Quarantine, by Dr. G. J. Kaumheimer, of Milwaukee; National and State Quarantine, by Dr. T. H. Hay, of Milwaukee; The Disinfection of Rooms after Contagious Diseases, by Dr. U. O. B. Wingate, of Milwaukee; House Disinfection, by Dr. G. V. Mears, of Fond du Lac; The Vital-statistics Problem in Wisconsin—a Remedy, by Dr. U. O. B. Wingate; A Plea for Better Regulation of Vital Statistics, by Dr. J. W. Coon, of Milwaukee; The Care of the Eyes, the Nose, and the Mouth of the Newborn, by Dr. C. D. Conkey, of Superior; The Hygiene of the Cord, the Skin, the Scalp, the External Genitals, the Urinary Apparatus, and the Anal Orifice, by Dr. M. L. Robey, of Grantsburg; The General Care of the Infant from Birth to Childhood, by Dr. H. D. Fuller, of Seymour; The Hygiene of the Nursery and Food, by Dr. C. F. Dougherty, of Muscoda; The Hygiene of Sleep, by Dr. John Baird, of Superior; The Hygiene of Clothing, by Dr. J. A. René, of Superior; The Hygiene of the Skin, by Dr. L. Schiller, of Milwaukee; The Hygiene of Exercise, by Dr. John Specht, of Superior; The Hygiene of Tuberculosis, by Dr. W. E. Ground, of Superior; Paternalism in School Hygiene, by Dr. J. R. Barnett, of Neenah; School Hours too Long, by Dr. William Meacher, of Portage; The Hygiene of our Country Schools, by Dr. E. L. Boothby, of Hammond; The Hygiene of our Public Schools, by Dr. U. P. Stair, of Fort Atkinson; The Hygiene of the Schoolroom, by Dr. R. M. Wigginton, of Waukesha; Heat and Ventilation, by Dr. D. C. Beebe, of Sparta; The Ventilation of Schoolrooms, by Dr. J. H. Dawley, of Antigo; The Effects of Foul Air in Schoolrooms—Overcrowding and Improper Heating, by Dr. J. H. Voje, of Oconomowoc, Dr. T. W. Nuzum, of Brodhead, and Dr. L. B. Collier, of Merrill; The Bad Effects upon Children's Chests and Lungs of School Desks not Regulated to their Height, by Dr. J. A. Bach, of Milwaukee; Notable Instances of Successive Cases of Phthisis in Certain Families and Households, by Dr. W. H. Borden, of Milton, Dr. C. M. Smith, Jr., of Evansville, Dr. James Mills, of Janesville, and Dr. J. Binnie, of Poynette; The Factors causing Phthisis: Bacilli—Dampness—Heredity, by Dr. W. F. Whyte, of Watertown, and Dr. S. C. Buchan, of Racine; The Bacillus Tuberculosis: its Length of Life, Diffusion, etc., by Dr. B. F. Bellack, of Columbus; The Transmission of Tuberculosis, by Dr. F. R. Garlock, of Racine; The Communicability of Phthisis, by Dr. H. M. Reid, of Menominee, Mich.; The Disinfection of Sputa, by Dr. E. F. Woods, of Janesville, and Dr. L.

M. Bachhuber, of Mayville; The Best Means of Disinfecting a House after a Death from Phthisis, by Dr. W. S. Haven, of Racine; The Best Means of Protecting the Health of the Household against Phthisis, by Dr. Carl R. Feld, of Watertown; Should the State Treat Cases of Phthisis as Contagious? by Dr. M. E. Corbett, of Oshkosh, Dr. A. M. Elliott and Dr. F. N. Sauer, of Racine, Dr. B. U. Jacob, of Waukesha, and Dr. F. T. Nye, of Beloit; Measures to Prevent Physicians from contracting Contagious Diseases by the Air-passages, by Dr. J. J. Howard, of Columbus; The Bad Effects of Tobacco Smoke on Infants and Young Children, by Dr. James Gibson, of Janesville, Dr. Margaret Caldwell, of Waukesha, Dr. H. L. Wilson, of Racine, and Dr. M. B. Sharp, of Madison; The Bad Effects of the Cigarette Habit on Children and Youth, by Dr. F. A. Brodsky, of Racine, and Dr. S. Severson, of Madison; The Prevention of Whooping-cough, by Dr. W. A. Engsberg, of Lake Mills; The Prophylactic Treatment of Bronchitis in Children, by Dr. T. H. Hay, of Milwaukee; Measures to Protect Workers in Factories and elsewhere from Noxious Dust and Gases, by Dr. F. R. Wright, of North Greenfield, and Dr. W. C. Elliott, of Racine; Working in Compressed Air, by Dr. Sleicher, of Watertown; The Prevention of Follicular Amygdalitis, by Dr. A. S. Maxson, of Milton Junction; Acute Lobar Pneumonia—Ætiology and Prevention, by Dr. G. A. Heidner, of West Bend; Lung Gymnastics, by Dr. W. E. Owen, of Fox Lake; Proper Clothing by Day and Night, by Dr. R. G. Sayle, of Milwaukee; The Hygiene of the Nostrils, the Mouth, and the Tonsils, by Dr. J. P. Thorne, of Janesville, and Dr. J. S. Koch, of Racine; The Inhalation of Ether—The Dangers and Precautions, by Dr. George Saunders, of Superior; On Walls and on Carpets on Floors, by Dr. L. H. Frary, of Oregon; Some of the Sources of Water Contamination, and How to Avoid its Evil Results, by Dr. H. Reineking, of Sheboygan; The Contamination of the Water Supply of Country Schools, by Dr. J. F. Ford, of Omro; Water-borne Diseases Due to a Careless Disposal of Sewage, by Dr. J. Noer, of Stoughton; The Water Supply and Drainage of Country Homes, by Dr. L. H. Pelton, of Waupaca; The Importance of the Water Supply in Cities and in the Country—How it is Best Procured, by Dr. W. T. Sarles, of Sparta; The Domestic Well, by Dr. R. M. Wigginton, of Waukesha; The Chemical Analysis of Water, by Dr. Andrew S. Mitchell and Dr. H. E. Bradley, of Milwaukee, and Dr. G. W. Harrison, of Ashland; The Advantages of the Use of Deep Underground Waters for Household Purposes, by Professor C. R. Van Hise; A General Résumé of the Subject of Sewage Disposal, by Dr. J. A. Mack, of Madison; The Construction and Use of Privies and Cesspools, by Dr. H. B. Sears, of Beaver Dam; Privy Vaults and their Remedy, by Dr. B. A. Brown, of Milwaukee; The Pail and Dry-earth System, by Dr. E. C. Helm, of Beloit; Chemical Precipitation, by Dr. J. C. Rowley, of Prairie du Chien; Broad Irrigation, by Dr. C. A. Armstrong, of Boscobel; The Best Method of Sewage Disposal on the Farm or in Small Communities, by Dr. B. C. Brett, of Green Bay; Soil Pollution from Careless Disposal, by Dr. F. A. Lyman, of Madison; Legislation for the Prevention of Blindness in the Newborn, by Dr. H. V. Würdemann, of Milwaukee; Ophthalmia in the Newborn—its Relation to Blindness—Prophylaxis, by Dr. Gilbert S. Seaman and Dr. C. Zimmermann, of Milwaukee; Granular Conjunctivitis in the Public Schools, by Dr. E. W. Bartlett, of Milwaukee; The Lighting of Schoolrooms and its Relation to Anomalies of Refraction by Dr. J. A. Bach, of Milwaukee; The Proper Type and Paper for Text-books, by Dr. W. C. Abaly, of Madison; The Care of the Eyes in School Children, by Dr. S. C. McGilvra, of Superior; The Examination of the Eyes of School Children as a Hygienic Measure, by Dr. J. Steele Barnes, of Milwaukee; An Examination of the Sense of Hearing in Children Before or During School Life, by Dr. C. W. Root, of Milwaukee; The Influence of Deafness upon Mental Development, by Dr. O. T. Hongen, of Grand Rapids; The Duty of the Government to the Individual in the Matter of General Hygiene, by Dr. Walter Kempster, of Milwaukee; The Elimination of Contagious Diseases, by Dr. N. M. Dodson, of Berlin; The Hygiene of Acute Infectious Diseases Generally, by Dr. L. B. Shehan, of Superior; The Necessity of a General Knowledge of what Bacteriology Means, by Dr. W. C. Bennett, of Milwaukee; The Care of "Well People" in Houses where there is Diphtheria, by Dr. A. B. Grider, of Milwaukee, and Dr. J. C. Hughes and Dr. A. B. Metcalf, of Janesville; The Preventive Measures to be Adopted to Arrest the Spread of Diphtheria by Physicians and Nurses, by Dr. Charles Schaper, of Franklin, Dr. E. E. Loomis, of Janesville, and Dr. E. L. Bullard, of Waukesha; The Bad Effects of the Improper Ventilation of Sleeping Rooms, by Dr. A. J. Hodgson, of Waukesha, Dr. O. S. Canwright, of East Troy, and Dr. B. J. Hill, of Genoa Junction; The Prevention of Insanity, by Dr. M. J. White, of Wauwatosa; The Relation of Master toward Servant in Case of Infectious or Contagious Diseases from a Medico-legal Standpoint, by Dr. Hugo Philler, of Waukesha; A Plea for Legislation for the Protection of Our Profession, by Dr. F. W. Adamson, of Milwaukee; and The Hygiene of Athletics, by Dr. C. S. Sheldon, of Madison.

The Treatment of Abscesses of the Auditory Canal.—In an article on this subject in the *Journal des praticiens* for May 2d, M. Courtade remarks that in the treatment of abscesses of the auditory canal we have to consider two conditions: The abscess occurs during the course of a suppurative otitis media, or it may be idiopathic, and this distinction is of great importance from a pathogenic or prophylactic point of view.

When a circumscribed swelling of the wall of the canal, accompanied by redness and lancinating pains which are aggravated on pressure, lead to the diagnosis of abscess, an attempt to arrest its progress may be made by painting the region with a one-in-ten solution of silver nitrate or with a one-in-ten solution of carbolic acid in glycerin. An ointment containing mercurial ointment and belladonna may also give good results.

Another mode of treatment, says Mr. Courtade, which has been employed for years and gives excellent results, if it is applied in the beginning, consists in introducing a drain into the auditory canal. The pain may be more acute at first, but it very soon becomes allayed when the infiltration is absorbed and the abscess arrested. If, however, the pain persists, two or three leeches may be applied in front of the tragus, and the following solutions may be used in a spray:

1. Neutral sulphate of atropine..... 3·5 grains;
   Water..... 300 "
2. Extract of opium..... 3·5 grains;
   Distilled water..... 300 "
3. Wine of opium..... 60 grains;
   Distilled water..... 600 "

Starch poultices or cold applications with Leiter's apparatus may be useful in quieting the pain. Bathing the ear with hot antiseptic solutions or absolute alcohol is indicated in certain cases according to Liel and Urbantschitsch.

Surgical intervention in the beginning is a disputed question, says M. Courtade. Some writers are in favor of an early incision, while others do not practise it until later.

The author states that he has resorted to surgical inter-

vention in several cases, and that it gave rise to no complications; on the contrary, he says, it prepares a passage for the pus and diminishes the pain very perceptibly.

When the abscess has reached the second stage, however, incision is certainly clearly indicated, and after the pus has entirely discharged the sac should be tamponed with iodoform gauze. The patient should be directed to use antiseptic injections several times a day in order to bring away any pus that may collect in the auditory canal. If the tumefaction is extensive enough to obliterate the lumen of the canal, drainage must be repeated in order to open a passage to enable injections to reach the membrana tympani, so that the pus may be driven out and the formation of a new abscess prevented. This treatment should be continued for several days after the disappearance of the pus, in order to prevent other abscesses from forming in this region. The itching consecutive to this affection may be allayed by the use of an ointment containing zinc oxide.

Tannoform.—This new preparation, introduced by Merck, according to the *Therapeutische Wochenschrift* for May 10th, is a condensation product of tannin and formaldehyde, $C_{29}H_{20}O_{18}$. It is a light reddish-white powder, insoluble in water, but soluble in ammonia water and in other alkaline solutions. According to the unanimous reports of many well-known dermatologists, it is a perfectly harmless application and one of great utility in the treatment of bedsores and of hyperidrosis. It differs from tannin in its action. A mixture of one part of tannoform and four parts of starch is very efficient in the treatment of soft chancre, also, according to Dr. von Oefele, in that of itching of the vulva in diabetic women. In ozæna, too, it seems to exert a favorable action. It is used as a dusting powder, pure or mixed with four times its weight of powdered starch. Further reports on tannoform are said to be in course of preparation.

Bacteria in Oysters.—In the May number of the *Glasgow Medical Journal* Mr. M'Crorie states that an outbreak of typhoid fever among some persons who attended a ball caused the oysters to be looked upon with suspicion as having been the carriers of the infection. Dr. Chalmers, he says, made a careful inquiry as to the cause of the outbreak and came to the conclusion that the infection had not been conveyed in the oysters. Mr. M'Crorie further states that he himself undertook a bacteriological examination of oysters taken from the same bed, at the request of the man who imported them, and the results of his investigation agreed with Dr. Chalmers's conclusions.

The oyster was cut into small pieces, and, with the fluid, was placed in a sterilized vessel, and a small quantity of sterilized water was added. Rodet's, Vincent's, and Holz's methods, says the author, were tried for the purpose of isolation; but the bacteria to be described were isolated by Koch's plate dilutions, and by Widal and Chantemesse's carbol-gelatin plates. Parietti's method was also practised, and, if infallible (as maintained by Parietti), the typhoid bacillus should have been afterward found, as distinct cloudiness was caused in the hydrochloric-phenol bouillon (to which a drop of the suspected fluid had been added) after standing twenty-four hours in the incubator. The *Bacillus typhosus* was not discovered, but one was isolated which so closely resembled it in so many particulars that its identity might easily have been mistaken, and, in fact, only a year or two ago would, the author thinks, have been regarded as the typhoid organism.

Six distinct germs were isolated, of which four liquefied the gelatin and two were non-liquefying. Of the two non-liquefying germs, one was the typhoid-like bacillus, and the other was a torula; while among those which liquefied the gelatin, colonies of *Bacillus fluorescens liquefaciens* and of a vibrio were very abundant. The most important is the typhoid-like bacillus which, says the author, was isolated by Koch's method. It was not found in the carbolic acid (0·25 per cent.) gelatin. Widal and Chantemesse assert that the *Bacillus typhosus* is the only organism that can grow in this medium; Holz, on the other hand, believes that this germ can not grow in the presence of 0·1 per cent. of carbolic acid; and Dunbar declares that the *Bacillus coli communis* offers greater resistance to the carbolic acid than the *Bacillus typhosus*. The bacillus under consideration was isolated from the carbol-gelatin, so that the author is inclined to believe (like Cassedebat) that the resistance of the *Bacillus typhosus* to carbolic acid is a property which seems to be without value.

The colonies of the typhoid-like organism on the gelatin plates (second and third dilution) were fairly numerous, says Mr. M'Crorie, and after careful examination with the naked eye and with the low power, gelatin tubes were inoculated from these colonies. Three of these tubes were under observation, and, while he believes that the bacilli in these tubes were identical, slight differences were noted. Mr. M'Crorie here gives a detailed description of this bacillus with regard to its form, coloration, motility, and inoculation. The experiments were performed by Dr. Workman, of St. Mungo's College, Glasgow, and the results confirmed some of the author's observations.

Bacteriologists, he continues, are agreed that the *Bacillus typhosus* of Eberth bears a striking resemblance to the *Bacillus coli communis* of Escherich, but the majority are agreed that the non-coagulation of milk (Dunbar, Petruschky, Widal, and Chantemesse, etc.), the non-production of gas in glucose bouillon (Th. Smith, Welch, etc.), and the negative indol reaction (Péré, Kitasato, Lewandowsky, etc.), are properties possessed by Eberth's bacillus and not by Escherich's, and are sufficient points of distinction. It is evident, therefore, he says, that the *Bacillus coli communis* may be at once excluded, and that we have only to compare the bacillus under discussion with the *Bacillus typhosus* and the pseudo-bacilli which at different times have been described by different observers. Before introducing the pseudo-typhoids, it is evidently of the first importance to decide whether this oyster-found organism is identical or not with the bacillus of Eberth.

Regarding the points of resemblance morphologically the two are identical; both are motile, both take on the aniline colors slightly, and both are decolorized by Gram's method. Neither of them liquefies gelatin, and the gelatin plate colony, the gelatin stab culture, and the agar streak culture are somewhat similar. Slight differences might be pointed out in these media cultures, but the growth of the *Bacillus typhosus* in gelatin and agar is not sufficiently characteristic to be of much value for diagnostic purposes. Both grow similarly in bouillon; neither of them coagulates sterilized milk until late, and both make the milk acid. The growth of the *Bacillus typhosus* on potato is very characteristic, and is recognized by Günther and others as of the greatest diagnostic importance. The growth of the oyster bacillus on potato is similar to that of the *Bacillus typhosus*. Neither gives the indol reaction; neither produces gas in glucose or lactose bouillon; and both render the glucose bouillon acid.

The points of difference are that the oyster bacillus differs from the *Bacillus typhosus* in that it may be virtually regarded as non-pathogenic to animals; that it does not seem to possess so many flagella; and that it has a different optimum temperature.

Too much stress must not be laid, however, upon its non-pathogenic character. While it is the case that animals inoculated with the *Bacillus typhosus* frequently die from septicæmia, still we must remember Sanarelli's conclusions. He conducted a long series of experiments on animals with this bacillus, and stated that the bacillus of typhoid fever, such as was obtained directly from sick persons, showed little activity toward animals. He further remarked that the rapidity with which a typhoid virus, even very active, lost its pathogenic power, if it was not cultivated without interruption in the animal organism, tended to show that the bacillus of Eberth was endowed with a very unstable virulence. Vincent, as a result of his experiments, declared that if a rabbit was inoculated with one cubic centimetre, or even more, of a ten-hours' bouillon culture, it was very rare that a fatal result was obtained. The rabbit was little disturbed in its general health.

While the *Bacillus typhosus* thrives at room temperature, continues Mr. M'Crorie, its optimum temperature is 98·6° F. On the other hand, the oyster bacillus thrives best at room temperature, and grows but slowly in the incubator. This, says the author, is the great point of difference between the two germs, and is sufficient in itself to enable us to decide that the oyster organism is not identical with the *Bacillus typhosus* of Eberth. The other points wherein they differ are of value also in supporting this conclusion, and the germ, under consideration, he says, must therefore be regarded as one of the pseudo-typhoid germs.

Eczema of the Mucous Membrane.—At a recent meeting of the Association pour l'avancement des sciences, a report of which appears in the *Gazette hebdomadaire de médecine et de chirurgie* for May 7th, M. Catois remarked that eczematous manifestations on the mucous membranes might give rise to errors in diagnosis and be confounded with angina, stomatitis, cystitis, urethritis, or acute balano-posthitis, etc. Eczema of a mucous membrane, he said, was generally characterized by the comparative rapidity of its appearance, and it was observed more frequently in men than in women. Acute eczema was rarely accompanied by manifestations on the mucous membranes, but this was not the case in the chronic forms of cutaneous eczema.

A Study of Diphtheria and Scarlatina in the District of Columbia.—This was the subject of an interesting article by Dr. Austin O'Malley, who prepared it for the *Report of the Health Officer of Washington.* It has special reference, he says, to the fiscal year 1894 to 1895, although a consideration of these diseases for ten years preceding that date is included in the article, of which the following is the substance:

The general mortality from diphtheria during the past year was less than it has been at any time since the fiscal year 1888–'89. Among the white population it was less than it has been since the fiscal year 1887 to 1888. Among the colored population it was considerably less than it was during the preceding year, but somewhat greater than it was during the year 1892 to 1893; with the exception of 1892 to 1893, however, it was much less than it has been since the year 1888 to 1889. These favorable results are due in part to improved methods of disinfection and isolation, and to the almost general use of antitoxine by the physicians of the District since about the middle of last February. The annual average number of deaths from diphtheria in the District of Columbia is 151, and for the four months, March, April, May, and June, it was 31. During these four months of the past year there were only three deaths; in two of these cases no antitoxine was given; in one it was given too late. Dr. O'Malley thinks that he may safely say that the use of antitoxine has reduced the mortality by at least 28 deaths.

If these 28 deaths had occurred the mortality would have been 152, only the average number. That the disease itself was less prevalent than in former years, except in 1891, when it was epidemic, is not true. During the calendar year 1892 there were 357 cases; in 1893, 413 cases; and in 1894, 499 cases. During the fiscal year 1893 to 1894, however, there were 430 cases, and during the past fiscal year there were 396 cases; but in the past year he has made over 500 bacteriological examinations, and have thus rejected a large number of cases which would otherwise have been reported as diphtheria. As will be seen below, thirty-five per cent. of the cases reported as diphtheria are really not diphtheria. The disease, therefore, was more prevalent during the past year than it has been since the epidemic of 1891, but the mortality was less than it has been since the year 1888 to 1889. While Dr. O'Malley feels convinced that the rejection of sulphur as a disinfectant of articles not subjected to streaming steam and the substitution therefor of acid bichloride of mercury, and a closer attention to details of isolation than that which has heretofore obtained, have had much to do with lowering the mortality, still, he thinks, the chief hope is in the general adoption of antitoxine. Conservatism in the use of antitoxine is anything but conservatism, because the remedy is not new in the sense that it has not been tested sufficiently. The scientifically careful experimentation of men like Behring, Roux, Erlich, Kossel, and many others, was all finished before the discovery had come under the notice of the profession in general. That antitoxine produces nephritis is a strange charge, he says, for it will always reduce albuminuria in a remarkable manner, even when employed hopelessly late in diphtheria.

In April, 1894, the faculty of the Georgetown Medical School informed the physicians of the District that the bacteriological laboratory of the college had been equipped for the examination of cultures from cases of suspected diphtheria. From then until the beginning of July, 1895, there were 562 cultures sent in for diagnosis; 307 of these were primary cultures and 255 were secondary. One hundred and twenty-six of the primary cultures contained the Klebs-Loeffler bacillus, and 181 did not show the presence of the bacillus. Of the 126 patients in whom the bacillus was present, 23, or 18·25 per cent., died. The mortality of the examined cases, excluding the months of March, April, May, and June, 1895, during which antitoxine was used in most of the cases, was 27·16 per cent. The percentage of the cases reported at the health office in which there had been bacteriological examinations was 53·81 per cent. During the last six months of the fiscal year, in 78·34 per cent. of the cases which were reported at the health office the patients were known to have had the diphtheria bacillus present. Of the remaining 21·66 per cent., many of the patients, of course, must have had the bacillus present, while not a few showed no clinical evidence whatever of diphtheria, except a sore throat. It will no longer be just to reject thirty-five per cent. of the reported cases. Dr. O'Malley, however, in his estimate for this year, as compared with other years, rejected thirty-five per cent. of the reported cases, in order to have uniformity, and because it was impossible to learn how many should really have been rejected since the bacteriological examinations have changed conditions. This rejection has exaggerated the mortality of the year in proportion to the cases, but it is an additional proof of the decadence of fatality in comparison with other years. The mortality, then, in the cases examined bacteriologically, excluding the last four months of the year, was 27·16 per cent.; the average mortality in the District of Columbia for

ten years is 58·16 per cent., after including ninety-five per cent. of the croup deaths.

In making the examinations, says Dr. O'Malley, the New York method, modified slightly to suit the limited equipment, was used. The physicians themselves took the cultures and left them at the Georgetown Medical School laboratory. Loeffler's serum was the culture medium. The beef blood was collected in covered dish pans at a public abattoir, with no precaution as regards sterility in gathering, except that cattle killed after the Jewish method were rejected, because the stomach contents from the severed œsophagus in this case would at times be mixed with the blood. The blood was left in the ice room for thirty-six hours, and the butcher was instructed to free the clot when it stuck to the pan; then the serum was siphoned off into glass jars at the abattoir and taken to the laboratory, where it was immediately made up into Loeffler's serum and put into the culture tubes. The serum was coagulated and sterilized at 90° C. in a Wiesnegg coagulator. Three sterilizations for three hours at intervals of twenty-four hours were employed. The cotton plug was pushed into the tube slightly after the sterilization, and ordinary No. 4 bottle corks were boiled and put into the tube mouth over the cotton to prevent evaporation. The culture boxes were disinfected, after being used once, in a 1-to-200 alcoholic bichloride solution.

It is needless to insist, says Dr. O'Malley, upon the absolute necessity of this bacteriological examination. The proper use of antitoxine is altogether dependent upon a correct knowledge of the bacteria present in the patient's throat. It is useless to give antitoxine where the Klebs-Loeffler bacillus is not present, and if this bacillus is present the physician must know whether it is there in pure culture or mixed with pyogenic micro-organisms in order to give the proper dose of the serum. Biggs and Park last year, in their remarkable *Report on Bacteriological Investigations and Diagnosis of Diphtheria* to the health officer of New York city, show that according to the observations of Baginsky in Berlin, Martin in Paris, Park in New York, Morse in Boston, and others, in from twenty to fifty per cent. of the cases admitted even to diphtheria hospitals there is not true diphtheria. A study of the statistics of any large city will show that at least thirty-five per cent. of the cases reported by physicians to be diphtheria are really nothing but amygdalitis, pharyngitis, with now and then a case of membranous croup. Without a bacteriological diagnosis, therefore, thirty-five families in each hundred quarantined are unjustly quarantined and subjected to the trouble and expense of useless disinfection. The suffering this can cause to a poor family whose small business is often ruined by quarantine is a very serious consideration. The city is also frequently obliged to pay for bedding which has been needlessly destroyed.

Again, continues Dr. O'Malley, no matter what experience a physician may have had, he can not distinguish diphtheria in its early stages, or in children of good resisting power, from comparatively harmless throat affections. Wassermann (Ueber die persönliche Disposition u. d. Prophylaxe gegenüber Diphtherie, *Zeitschr. f. Hyg.*, xix, 3) has recently made a series of experiments which have proved that there exists an unexpected resisting power to diphtheria in many adults and children, and that this may be so great as to render the individual himself practically proof against the disease, while he may infect others as malignantly as if he had succumbed to it. In one series of 17 children from a year and a half to eleven years of age and of 34 adults, 11 of these children and 28 of the adults were not only proof against the disease, but they had enough active antitoxine in their blood to neutralize even a tenfold lethal dose of diphtheria toxine in some cases. The possibility of these subjects having had diphtheria was excluded by their history. This explains the fact, he says, that the Klebs-Loeffler bacillus is occasionally found in healthy throats. The conclusion to draw is that the possessor of this so-called healthy throat is personally proof against diphtheria, and really more dangerous than a person who is ill with the disease, because we can not guard ourselves against him. Some have drawn the conclusion that the Klebs-Loeffler bacilius is therefore not the cause of diphtheria, which is decidedly illogical. The tubercle bacillus has been found in the healthy nostrils of hospital nurses, but that does not prove that the tubercle bacillus is not the cause of tuberculosis. This immunity explains also the mysterious spread of the disease at times. There are frequently present in our schools children with sore throats which really are diphtheritic. School teachers should send in to the bacteriologist cultures from every case of sore throat in their schools. It is a simple matter, easily done, and it will be of value in keeping the disease in check.

It has been observed that when diphtheria becomes epidemic this does not take place suddenly, as in an outbreak of cholera. The disease insidiously grows worse year after year until proper means for combating it are adopted, or until the susceptible subjects have all been attacked. This course was very markedly followed in the District of Columbia during the past decennium. During the fiscal years of 1886 to 1887 and 1887 to 1888 the mortality was only 96. After that time there was a steady increase in the mortality year after year until there were 219 deaths during the year of 1891 to 1892. The law obliging physicians to report cases went into effect January, 1891, and isolation and the exhaustion of susceptible subjects caused the first decrease in the mortality in five years.

The estimated mortality in the District of Columbia from diphtheria during the past ten years, say Dr. O'Malley, is 58·16 per cent. He supposes that at least nine-five per cent. of the deaths attributed to croup were really due to diphtheria. Bacteriologists acknowledge that there is a disease called membranous croup, which is as distinct from diphtheria as typhoid is, but membranous croup is a comparatively rare disease. In a series of 286 cases (not deaths) diagnosticated as membranous croup by physicians of New York city, Park found the diphtheria bacillus in 229, or eighty per cent. Membranous croup as a cause of death is extremely rare; two per cent. is considered a liberal mortality by pathologists. Five per cent. is allowed in all these estimates, he says, not because he thinks that five per cent. of the reported croup deaths are really attributable to croup, but in order to give a fair allowance in favor of those who make this diagnosis. In four months of last year he examined five cultures taken from children who had died from membranous croup. Four of these were diphtheria and one was pneumonia. From December, 1884, to December, 1894, there were 1,518 deaths from diphtheria (ninety-five per cent. of the croup deaths included), and the estimated number of cases was 2,610; 1,518 is 58·16 per cent. of 2,610. Of course, he says, this estimate is only approximately correct.

With regard to scarlet fever, says Dr. O'Malley, during the past year there were only 16 deaths, 14 among the whites and 2 among the colored population. Five of the deaths were caused directly by the disease, and the remaining mortality was an effect of post-scarlatinal nephritis. It is impossible, he says, to obtain reliable statistics for this disease here, because in a territory like the District of Columbia, where a third of the population is colored, the diagnosis of

light cases is difficult. There have been 202 deaths in the past ten years, and of these 42 (20·79 per cent.) were among the colored population, and 160 (79·21 per cent.) were among the white people.

Brush, says the author, holds that negroes are comparatively proof against the disease, but he thinks there is very slight foundation for this doctrine. The colored population in the district for the past ten years has been always in the proportion of almost an exact third to the white population. Since 1885 the colored population has never been below thirty-two per cent. and never up to thirty-four per cent. of the entire population. Now, the 42 deaths among the colored people is nearly an exact third of the 160 deaths among the whites, showing that the disease is at least as fatal among negroes as among whites. The vast majority of these deaths in both races were caused by nephritis after scarlatina. The dark skin of the negro and the neglect among the poor (and our poor are mainly colored) of calling in a physician for a slight illness make it probable that many cases of death from post-scarlatinal nephritis among the colored race were not reported as such.

The disease, says Dr. O'Malley, is most fatal in April and less fatal in September in the District of Columbia. Its season is thus almost the direct reverse of the diphtheria season. The estimated mortality for ten years is 4·80 per cent., making no deduction for false diagnosis, which is not infrequent, and no addition for lack of diagnosis in light cases, especially among the colored population. The mortality is probably somewhat higher. Hildebrand, after a careful study of the disease in Freiburg (*Berichte d. naturforsch. Gesell. z. Freiburg i. B.*) makes the mortality there 7·41 per cent. One cause of the persistence of the disease is the lack of malignancy during late years. Children are sent to school while desquamation is going on, because the disease is not recognized.

Dr. O'Malley thinks that the promiscuous use of free schoolbooks, which obtains in the lower grades of our schools, is probably a source of infection for both scarlatina and diphtheria. It would be some protection, he thinks, if a new book was given outright to a child when it enters a grade, and the child itself should keep the book, and not mix it with the other books used by other pupils. When a child has finished with a book it should be destroyed, unless there is certainty that there has been no infectious disease in the child's family. This plan, however, would entail great expense, and it may be impracticable on that account. During the Christmas and summer vacations every schoolroom in the District should be disinfected by washing the floors and furniture and walls with a 1-to-1,000 acid bichloride-of-mercury solution and then burning four pounds of sulphur for each 1,000 cubic feet of air space. At present there is no satisfactory method for disinfecting books.

Despite all the efforts of the health department, very many children are permitted to leave the sick room before desquamation has ceased, and this, says the author, is another prolific source of infection. He states that he has found even three such cases in one morning. He cites Dr. William Gibson (*Practitioner*, vol. liii, p. 14), who says that he has experimented in light cases of scarlet fever with the action of antiseptics upon the skin in the later stages of desquamation, and found that the disinfected skin scales were non-infectious after the patients were permitted to mingle with other children. If his assertion is borne out by further observations, remarks Dr. O'Malley, it would save much trouble; but it is a dangerous experiment.

As to the length of time required for desquamation, Hildebrand found, in a series of 274 uncomplicated cases at Freiburg, that the average time was from four to six weeks. None of these patients finished desquamation in one week, 2 finished in two weeks, 6 in three weeks, 23 in four weeks, 49 in five weeks, 44 in six weeks, 41 required seven weeks, 23 required eight weeks, and 14 required more than eight weeks.

An Amusing Incident.—The *Lyon médical* for April 26th contains the following account of an incident which is said to have occurred in Chicago: A child was seized with a severe attack of croup during the night, and its father, whom we will call B., dressed himself hurriedly and started for a physician. The night was an exceedingly dark one, and his wife insisted that he should take his revolver for safety. In turning a corner of the street he was violently jostled by an individual who excused himself and passed on, when B., prompted by a sudden impulse, felt for his watch and found it gone. Instantly he leveled his revolver at the stranger and called to him to stop or he would shoot; the man stopped and B. ordered him to give up his watch. The man obeyed, and B. proceeded on his way to the physician's house. On his return he recounted his adventure to his wife, who told him that she had taken the precaution to remove his watch from his coat before he left the house. Half an hour afterward the physician arrived very much excited, and stated that in returning to his house he had been stopped by a man who had robbed him of his watch.

Foreign Aspirants to American Practice.—In his presidential address delivered at the recent annual meeting of the National Confederation of State Medical Examining and Licensing Boards, Dr. William Warren Potter, of Buffalo, of the New York State Medical Examining and Licensing Board (*Jour. of the Am. Med. Assoc.*, May 16th), said:

"One of the difficult problems confronted is in dealing with foreigners. These men come to this country in large numbers without knowledge of our language, where they are told that everything is as free as air, hence they expect to be admitted to practice at once without let or hindrance. Finding a State examination necessary, they plead poverty and demand leniency because of their imperfect knowledge of the English tongue. The question presented may be formulated about as follows: 'Shall one rule be established for our own countrymen, and another less rigid for these strangers?' I trust not and I hope the answer will be a unanimous negative. The injustice of such discrimination against our own citizens is too apparent to admit of argument. I would not make one rule for one class of candidates and another for another class, but I would administer the laws with impartiality, governing all alike.

"If one of our fellow-citizens should present such examination papers to a foreign board as these men generally offer to most of ours, he would be denied even the semblance of a hearing. His application would be dismissed without ceremony. Let it be remembered in connection with this that the country is not suffering for the want of doctors, and can wait without material injury until these men shall master the English language and otherwise conform to our rules—until they can place themselves on the same footing in every respect with our own countrymen. When they present themselves in a clear identity, with a legal diploma properly authenticated, and take our examination successfully, then we will gladly issue to them licenses to practice, but they should be made to understand at once that they can obtain them in no other way. This question is attracting the attention of medical journals in different sections of the country and has lately been discussed by one in a most decided and uncompromising manner."

Lectures and Addresses.

SURGICAL CLEANLINESS,

AN ADDRESS DELIVERED AT THE FORTIETH ANNUAL MEETING OF THE DEWITT COUNTY (ILLINOIS) MEDICAL SOCIETY, *April 14, 1896.*

BY GEORGE NOBLE KREIDER, A. B., M. D.,
SPRINGFIELD, ILL.

AT this anniversary celebration of a long existence for a western medical organization I take the liberty of mentioning the trite fact that surgery has made vast progress since this society was founded. My object in stating this fact is not to unduly traduce our ancestors or glorify ourselves. Our grandfathers would be the first to acknowledge the progress were they permitted to meet with us today, and we should be mindful of their success amid difficulties which are now happily largely overcome. There is yet too much to be learned for us to boast of our present advancement, great though it undoubtedly is.

We live in a progressive age and ours is a progressive profession. I make bold to say that no profession has so rapidly perfected itself in the last forty years as has the medical profession. No other profession has done so much for or given so charitably to the world its advances and discoveries as has the medical profession. Within the last year Professor N. S. Davis, Jr., stated to me his firm belief that the medical profession was better educated than the legal and clerical professions were. Upon my remarking that physicians deserved great credit for their learning because they had been compelled to work out their own salvation, he replied: "Yes; and it was because they had been compelled to rely on themselves for what they had done that they had reached this proud position." How true this is! The clergy are coddled and helped from the time they announce their intention of preaching the word. They seldom pay any tuition in the schools, and their bed, board, and clothing are furnished them at a discount. The lawyers secure from the State all legislation necessary to advance their interests and increase their emoluments. But the doctor, laboring humbly as a student and silently as a practitioner, has to fight his battle unaided from the time he takes up life's battle until he lays it down. The clergy accept too often his charity, and reward it by recommending some quack doctor or patented fraudulent medicine. The law demands tedious and valuable services from the doctor for which it pays nothing, or a miserable pittance. This harsh training is what makes the doctor bold and self-reliant. It enables him to forgive the follies and even crimes of the people, and strive honestly, in the vast majority of cases, to seek only after the truth. He advocates higher education of his student, not in the trades-union spirit which would limit the number of apprentices, but with the noble desire that his successor may be more skilled than he is himself. These are some of the reasons why we love our profession. I am proud that I have had the good fortune to spend as much of my life as I have in the ranks of a profession which has done and is doing so much for mankind, individually and collectively. It is not possible for me or for you, perhaps, to become a leader in medicine and surgery, but we may reflect some of the greatness of those who are leaders by being in their company. We can all, however, do good, and we owe it to ourselves and the community in which we live to so equip ourselves that we may offer the best advice which science affords and thereby fulfill the chief end of our existence. "*Qui non proficit deficit*"—he who does not move forward moves backward—is nowhere so true as in our profession. Keep abreast of the times or drop out of sight, is the law of our calling.

I have been in practice for about sixteen years, the greater part of the time in general work, but always with an eye to a surgical specialty. Owing to circumstances which I need not here detail my ambition was not fulfilled until January 1, 1891, when I was appointed one of the surgeons of St. John's Hospital, of Springfield. This hospital contains about a hundred beds and occupies a substantial brick and stone building of modern construction. It is under the management of the Sisterhood of St. Francis, an order of German origin, but having a considerable growth in this country. The thoroughness and military order inherent in the German character is seen in the work of the sisters, and this, when properly trained, has been of great advantage in arranging the surgical work, which will be shortly detailed. It had then been established about fifteen years. The surgical department had not grown with the growth of the hospital itself or the city. Its equipment in operating room, instruments, appliances, and training of nurses was extremely primitive. Antiseptic surgery was practised in a deceptive way—that is, it was imagined that there was antiseptic surgery, but really none was practised, and so the worst of all deceptions, self-deception, existed. For sterilizing the hands, a little carbolic acid was poured into water and the hands passed through the solution in a perfunctory manner. No thought was given to the nails, and no facilities existed for washing the hands properly. This is a sample of the condition which existed when I entered upon my work. I have thought it might be of interest and benefit to recount on this occasion in brief the difficulties which were met and how they were overcome. I hope in this way to illustrate the development from the old to the newer way of practising surgery. The surgeon of to-day must obey the injunction of the *Book of Common Prayer* and approach his work with a pure heart and clean hands. Every one here knows that cleanliness is the foundation stone of modern surgery, but I venture to say that very few of my hearers could carry out surgical cleanliness unless they have made a special study of it and had cultivated for some time the "antiseptic conscience." One of the axioms of modern surgery is a legend which is inscribed on the walls of the operating room of a celebrated operator—viz., "Nothing is clean which can be made cleaner." This should be the motto of each of us as regards the room in which we operate, the hands, instruments, and the patient to be operated.

But to return to the consideration of the hospital,

where I can best illustrate my points. I found in the hospital five years ago three operating rooms, situated in different parts of the house, not one of them properly located or equipped, heated, or lighted.

Two of them were at once abandoned, and a single room of ample size, facing the north, on the upper floor, was selected, where a top light could be secured. Adequate heat was introduced, and a full set of sterilizing apparatus for the hands, instruments, water, and dressings was provided. For cleansing the hands a large porcelain-lined sink was erected with an ample supply of hot and cold water from two faucets, so that two persons could use it at the same time. Some few years ago I was about to begin preparations for operating on a severe case of appendicitis. I requested a colleague who was to assist me to give his hands a thorough washing. His reply was that it was not necessary, as he had washed his hands just before he left his home, a half hour before. Of course, the members of this intelligent society would not be guilty of this gross offense against modern surgical cleanliness, but I am sure that too many of our profession do not even now wash their hands after leaving home, and as a consequence of their uncleanliness great suffering results, and many mysterious dispensations of Providence occur which result in death. The care of the doctor's hands might well be made the title of a whole volume, so great is its importance and so much has been the study devoted to the best way of caring for them. Suffice it here to say that elaborate experiments have been made to determine how long and with what kind of instrument and soap it is necessary to scrub the hands to make them surgically innocuous. My habit is to wash the hands with soft soap and this brush for five minutes. To be sure of the time, and for convenience, I have this sandglass hung upon the wall above the sink.

This sandglass is used by the housewife for convenience in determining the length of time she should boil eggs, but we use it for the more noble and glorious purpose of asepsis. I discovered this valuable little assistant in one of our tin stores. We use one of these also for determining the proper length of time for boiling the instruments for sterilizing them. After the hands are washed with soap and water the nails are trimmed with a pair of small scissors. Scissors I find much more valuable for this purpose than the knife blade or any instrument for scraping the nail. To avoid the irritation of the skin resulting from so thorough and frequent washing, I have a bottle of glycerin, rose water, and tincture of benzoin on the shelf above the sink, and, by using it frequently, I manage to keep my hands soft and free from chaps. This brush is kept in a solution of bichloride when not in use, to prevent the growth of germs in its fibres and to prevent the transfer of disease from one person to another. I always use this particular form of brush (ladies' hand brush, second quality, made by E. Clinton & Co., of Philadelphia) because the bristles are not too stiff and when soaked do not lacerate the skin. After one has suffered from mild degrees of blood poisoning from slight abrasions about the hands, he will take any precaution to prevent these abrasions. After thorough cleansing, as has just been stated, the hands are vigorously rubbed with alcohol for two minutes, and finally with bichloride solution for three minutes more, and if this has been conscientiously carried out in every detail the hands can be said to be perfectly aseptic and capable of doing no harm. It will be observed that bichloride or carbolic acid plays a very small part in the preparation of the hands, and it can not be too often repeated that merely soaking the hands in a solution of either of these germicides is of no value at all. The grease and dirt of the hands must be removed by an alkaline soap and the expenditure of good, strong rubbing. If anything is to be left undone it should be the use of the antiseptics. Especial attention is paid to the skin of the patient whenever it is possible. A full bath is always given and a poultice of soft soap is put on the site of the operation for twenty-four hours before the operation is to take place. The site is then shaved, scrubbed, and washed with alcohol and bichloride, always remembering that soap and water are of more value than the other articles mentioned.

I can not let this opportunity pass without adding a word concerning the practice of obstetrics, in which the importance of especial care of the hands and female genitals is not yet understood, as I firmly believe. The precautions I have mentioned are to be carried out by the attending physician every time he undertakes a case of obstetrics. I think the idea expressed some years ago that a physician should use the same precautions in attending a case of obstetrics that a surgeon would in undertaking a surgical operation is entirely correct. To me the ideal way of attending a case of obstetrics would be for the physician to see his patient some weeks before the expected confinement and, after examining the urine, to measure her pelvis. The measurements and urine having been found right, she should be warned about the cleanliness of her person and instructed how she can best make the necessary cleansing of her parts.

Then, at the time of confinement, the physician should go with his suit of linen clothing newly washed, which should be drawn on over his usual clothing. He should have a clean nailbrush for his hands, scissors for trimming his nails, alcohol and bichloride tablets for sterilizing the hands, sterilized oil for anointing the fingers and instruments, a sterilized Kelly cushion for catching the discharges and keeping the bed clean. If these precautions, which I have only stated in brief, were carried out, there would be no milk fever, malarial fever, or plainly puerperal fever, such as is too often found even now. I think I appreciate the difficulties with which physicians have to contend, but still I believe that much might be done to better the conditions under which they work if they only tried to enlighten the people on this important subject.

I will mention just here another very important point in which I have only recently made a radical change from the former practice. I refer to the simple matter of giving a hypodermic injection. You are fortunate if you have never had an abscess follow a hypodermic injection. I have had several times, but fortunately they were insignificant. Recently in the hospital one of the nurses became careless, and as a result the life of a valued patient of my

colleague was nearly sacrificed. The needle was inserted on the outer surface of the arm. A large abscess developed, with high fever and septicæmia of a violent character. Fortunately, it was overcome and the patient saved. The lesson was sufficient to cause me to investigate the subject, and I soon found that this experience was not unique. Tuberculosis, malignant pustule, purulent œdema, erysipelas, and perhaps other diseases have been transmitted by the hypodermic syringe, and not a few persons have lost their lives in this manner.

In order that no more such dangerous accidents may occur I have directed that particular attention should be paid to the syringe, the skin, and the solution containing the medicine. I have introduced the use of this syringe. It can be thrown into water and boiled without injuring any of its parts. I now direct that the site of the injection should be cleansed with soap, water, and alcohol, and a piece of sterilized gauze. Thirdly, I have directed that the solutions of morphine or other drug to be injected be made up with a one-per-cent. solution of carbolic acid. By carrying out these precautions we can be reasonably certain that no more abscesses will result from hypodermic injections. The syringe should be washed out with sterilized water or else be boiled after each using.

Another convenience which we use a great deal, and which you have all doubtless found very valuable, is the Kelly rubber cushion. A friend of mine, a prominent Chicago surgeon, condemns this cushion in the strongest terms, because, he says, it is only a collector of filth which can not be got rid of after the first using. I think I have overcome all objections to this valuable cushion by first having it well washed with soap and hot water and then keeping it immersed in a bichloride solution of 1 to 2,000, which is contained in a five-gallon stone jar. In this jar we keep all our rubber tubing, which is first washed with sapolio before it is immersed. In place of the glass douche, jar, or rubber bag we use this very elegant two-quart metal cup covered inside with white and outside with blue enamel, and which, so far as I know, can only be obtained from the Holekamp-Moore Company, of St. Louis.

The tips are made of glass of various forms, and are also to be obtained from the same St. Louis firm.

The tables in use are as far as possible made with glass tops, so that nothing can be absorbed from them, and they are thus easily cleaned. Glass and easily cleansed materials, such as this blue and white ware, are used as much as possible throughout the hospital.

For cleansing the instruments, a one-per-cent. solution of carbonate of sodium is used, in which they are boiled for five minutes. The soda serves a good purpose in dissolving off the grease and other foreign matter which may have contaminated them, and also prevents them from rusting, which is a very important point in itself. The heat of the boiling water for five minutes completes this work of disinfection and enables us to use the instruments in any given case, no matter how foul the wound may have been in which they were used an hour previously. For this purpose I use, in working away from the hospital, a portable sterilizer, which can be easily slipped into the hand satchel. If some boiler like this is not at hand, an ordinary granite iron roasting pan may be used and will be found very valuable. After taking the instruments from the boiler they are not laid in a carbolized solution, as was formerly done, but placed on a sterilized towel which absorbs the water and prevents carrying into the wound any of the solution, which might at times be irritating.

Knives are sterilized as well as other instruments by boiling, but to prevent their dulling from the ebullition of the water it is necessary to place them securely in a holder.

Sponges have been entirely abandoned for some years and their place taken by small pieces of gauze, which are kept in metal cases after undergoing the process of steaming under slight pressure for forty-five minutes. For abdominal work this gauze is cut into large squares and a piece of white tape sewed to one corner. When one of these pieces is placed in the abdominal cavity an artery forceps is clamped to this tape and the tape and forceps allowed to hang out of the way at the side of the abdominal wall. During an operation one nurse has charge of this case, and her sole duty is to raise the lid and allow the operator or his assistant to take out a piece of the gauze as may be required, when the lid is quickly closed and contamination of the remaining contents prevented. In this way the gauze only passes through one person's hands in reaching the wound, and the possibility of contamination is reduced to a minimum. Cases similar to this are used for sterilizing and holding towels, operating gowns, and sheets.

Finally, I will mention that our operating room is equipped with a special table which is easily cleansed, and which enables us to place our patient in almost any position for operating.

For all purposes we use only sterilized water. It is sterilized by boiling it for ten minutes in a special kettle, provided with a jacket, lid, and faucet from which the water runs into bottles holding about two thousand cubic centimetres. We find Buffalo lithia water bottles very good and cheap for this purpose. Besides the simple sterilized water we keep bottles containing solutions of carbolic acid, bichloride, and salt. The tendency is to abandon all medicated solutions and to rely altogether on simple sterilized water or the normal salt solution.

In this short description of my experience in changing from the methods of the old to the new surgery I hope I have been able to convey to the members of this society some of the principles which distinguish the one from the other. These simple means, thoroughly carried out, are the perfect cause of the present advanced status of surgery. And yet, simple as they are, I believe that they are not yet appreciated by the majority of the profession. If I have in any way been able in this paper to call your attention to the importance of surgical cleanliness in the practice of your profession in all its branches I will have accomplished some good. In conclusion, I will say that in no particular has the advance of medicine and surgery been so marked as in the changes which have occurred in the hospitals. Instead of being veritable pesthouses, which

were only to be entered in the last extremity, and which might well have had placed over their doors the famous quotation, "Leave all hope behind, ye who enter here," we find them to-day, when properly located and conducted, veritable houses of health and hotels of God, as they are so beautifully designated in the French language.

Original Communications.

OBSERVATIONS ON SOME CRITICISMS OF SERUM THERAPY.

THE ACTION OF SERUM ON THE BLOOD.

THE RESULTS OF SERUM THERAPY IN TUBERCULOSIS.*

By PAUL PAQUIN, M. D.

No department of therapeutics has called forth so much criticism as serum therapy. Not only in its application to those maladies in which the action of the serum is not thoroughly established, but also with respect to those infections in which it has demonstrated beyond a doubt its efficacy and comparative innocuousness, it has been attacked and condemned by medical men of all stages in the world of medical sciences, and it has even been derided by a few upon whom we looked with confidence before. But it is chiefly with respect to diseases which are of a slow type, such as tuberculosis, leprosy, and syphilis, that the treatment has been ruthlessly criticised and maliciously attacked. These maladies are so grave, and two of them are so hopeless by the methods of treatment of all ages, that it seems brutal for critics to go to the extreme of illogical and unwarranted condemnation, particularly when they can offer nothing better as a substitute. It seems proper, then, that the medical men who have devoted time to the scientific and clinical study of serum therapy should lose no opportunity to raise their voice in its defense, basing their opinion purely on science and facts.

The criticisms have been of two kinds: First, those based on scientific problems of biology; second, those based on clinical effects and results. It is well to separate these two fields of criticism and consider them apart.

The scientific criticisms bear chiefly on the nature and results of the experiments carried on in animals by the various scientists who have developed serum therapy, or have tested its merits in the laboratory. The tests to which most of the medical men look first with interest are those determining in the first place the natural, indifferent, benign, or untoward effects of serum, and then the tests to determine the general and special therapeutic properties and the specific effects on microbes and their products in the animal organism.

The physiological effect of serum of any kind, immunized or not, when injected into the system of another animal or man depend on (*a*) a coagulative property, by which a fibrinous clot may be formed in the veins, as was proved by Richet, Héricourt, and Hayem; (*b*) toxic properties, which means that the serum in any state may be toxic, and produce symptoms of poisoning of different kinds and fever, as I myself have often observed and mentioned before; (*c*) the globulicide property, by which it produces oligocythæmia and oligochromæmia—that is to say, a destruction of the red blood-corpuscles and hæmoglobin. This property, to be serious, depends on comparatively large doses, given abruptly, and thrown more or less directly into the blood, and it is perhaps not constant.

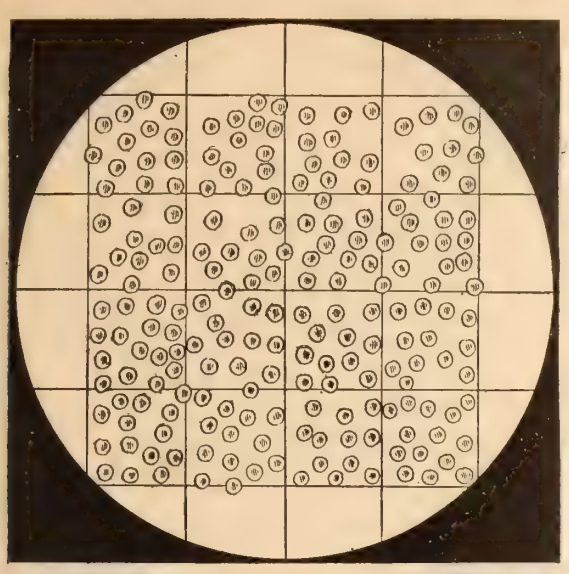
Because of these effects much criticism has been heaped upon serum therapy as being a dangerous element in the practice of medicine. The critics do not seem to realize that even though these properties could not be modified, as they can to a large extent, all potent medicines have objections, and all of them may produce untoward symptoms, poisonous phenomena, often irrespective of dose, and that besides this some people have idiosyncrasies precluding their use. Thus, cocaine may produce fatal results when least expected, and sulphonal, now universally used, and usually without the slightest untoward exhibition of a serious character, may cause, we are assured, dangerous obstruction of the kidneys.

These undesirable effects of serum, then, should not carry weight in practice, except to the end of placing before the physician data to guide him for the proper administration of the remedy, so that the untoward actions may be prevented, or properly treated and arrested if they develop. As just alluded to, it has been well demonstrated of late that all of these properties of serum can, to a large degree be eliminated by laboratory technique, leaving to the serum its antitoxic properties. These undesirable effects are not due to antitoxine, nor are they due to the specific processes of immunization. They are natural, and it is doubtful whether immunization produces any agent of a toxic character except as may be incidental to the methods followed and the nature of the care of the animals immunized. For instance, during severe exercise of a horse waste products are formed which may load the serum with toxines, and, if bled shortly after, this fluid may produce bad results if injected in man's blood. Again, an animal bled too often may eventually present in its serum toxic properties which seem to be of a natural recuperative origin in the system drained by successive draught on the blood. These things I have observed in my experiments. But all of these effects are most entirely avoidable by the experienced laboratory technician, and in view of the beneficial results obtained with serum they should not in the least militate against its use in proper cases and proper diseases, and should be a stimulus to the doctor to familiarize himself more thoroughly with serum therapy before applying it in any disease.

To illustrate the most striking deleterious results of serum therapy injudiciously applied—viz., the globulicide property—I have, as others more learned have before me, conducted experiments in animals and man and analyzed the results.

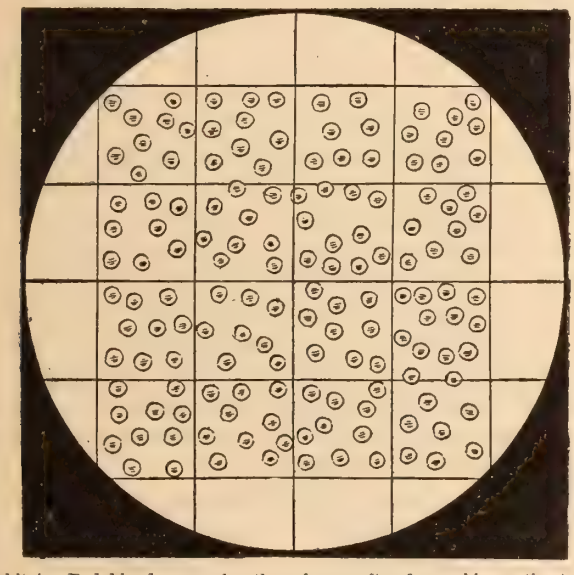
* Read before the Tri-State Medical Society of Iowa, Illinois, and Missouri, April 8, 1896.

Rabbit "A," in good health; number of red blood-corpuscles to the cubic millimetre, 5,800,000.



Rabbit A. Red blood-corpuscles before serum injection.

Injected four cubic centimetres of pure horse-blood serum, immunized, into a vein. Three hours later the red blood-corpuscles were counted again and they had dropped to an average of 3,900,000 to the cubic millimetre, a loss of 1,100,000 to the cubic millimetre of blood.

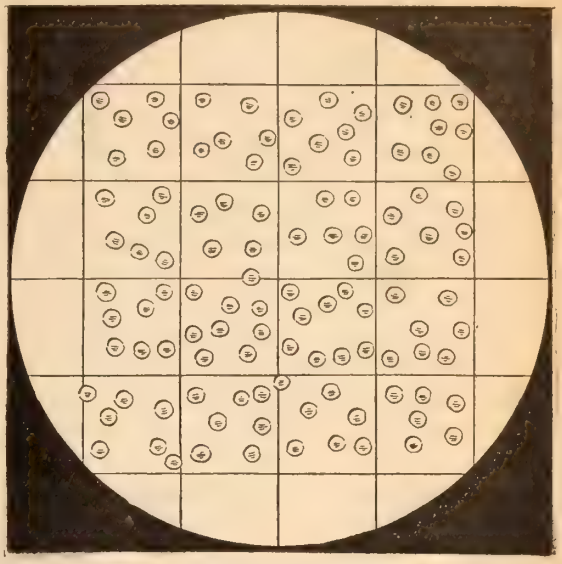


Rabbit A. Red blood-corpuscles three hours after four cubic centimetres of serum were suddenly injected.

Eight hours later, three cubic centimetres more of pure serum from another horse were injected into the circulation, and within four hours the red blood-corpuscles had been reduced to practically 2,800,000, or 3,000,000 less than before any injection.

At the same time the leucocytes had increased in large numbers, as will be explained further.

Practically the same results were obtained in a man of thirty-five years. The number of red blood-corpuscles averaged 4,400,000 per cubic millimetre before injection of pure horse-blood serum. Ten cubic centimetres were injected as follows, the patient never having received it before—*i. e.*, eight cubic centimetres hypodermically in the back and



Rabbit A. Red blood-corpuscles eleven hours after the injection of four cubic centimetres mentioned in the preceding figure, and four hours more after an additional three cubic centimetres.

two cubic centimetres in a vein of the arm. Four hours later the red blood-corpuscles averaged 3,800,000 per cubic centimetre. The face flushed almost purple immediately after the venous injection, and there occurred great oppression, with dyspnœa for three or four minutes. Six hours later the corpuscles averaged 3,000,000. Equilibrium was regained very slowly. Again, in this instance, the white cells were increased enormously.

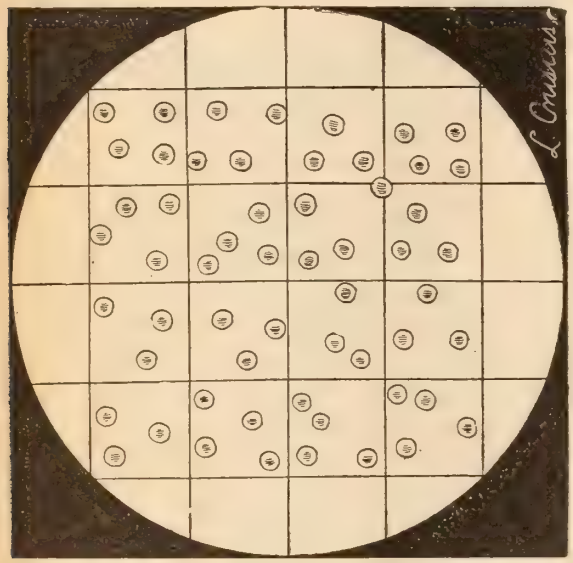
In these experiments, both in man and beast, in which the red blood-cells diminished largely in number, the temperature descended slowly below normal, and there were pronounced symptoms of depression.

The same result to a lesser degree occurred in a tuberculous patient injected accidentally in the circulation in the back. But, as mentioned before, this globulicide property does not appear to be a constant factor of serum, or else some individuals (man or beast) resist better its influence than others of the same species, for other experiments in the same manner (though not yet completed) often failed to diminish the number of red cells in the same ratio, and some failed almost entirely.

Now, these effects argue not against serum therapy, as will be seen by other tests illustrated below, but speak eloquently in favor of a better knowledge of this mode of treatment before its use. It does not show that it is a fatal remedy, but one to be used judiciously, with a proper understanding of all the points involved. It shows that we may prostrate a patient by a sudden venous injection of serum, and possibly by the use of a sudden large dose hypodermically in the subcutaneous tissue. I have in mind now the case of a five-year-old child, in whom the diphtheria membranes sloughed off and fever yielded down to nearly normal in twelve hours after an injection of eight cubic centimetres of diphtheria antitoxine, and died prostrated, probably from the globulicide effects of serum, forty

hours after a second and in my opinion a wholly unnecessary dose of eight cubic centimetres more, given as a precautionary measure. The temperature after the last dose promptly dropped to 98°, 97°, 96°, and death ensued after the diphtheria phenomena had disappeared.

On the other hand, both in animals and in man, if the serum is used in progressive doses in the connective tissue, whether the treatment is prolonged or not, the globulicide property becomes nil, and is, in fact, reversed after a time.* It is thus that in Mr. S., a tuberculous patient, very anæmic, in which the red blood-corpuscles were only about 3,000,000 per cubic millimetre at the beginning of the antitubercle-serum injections, at a daily dose of five minims at first, increased very gradually to ten, fifteen, twenty, twenty-five, and finally thirty minims (about two cubic centimetres and a half), which was reached after one month, the red cells had increased to nearly 5,000,000 to the cubic

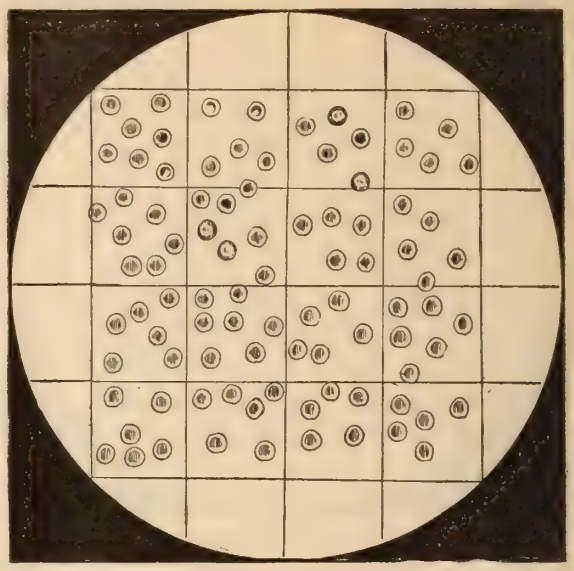


Red blood-corpuscles in man before careful progressive injections of antitubercle serum. Average number, about 3,000,000 to the cubic millimetre.

millimetre. No other treatment was administered during this course, and this is not an isolated case.

Because it is deficient, I consider seriously anæmic individuals, who have been in such a condition for a long period, comparatively poor subjects for serum therapy, particularly in heavy doses, when unaided by any blood recuperative remedy, and yet I have repeatedly noticed the large increase of red blood-corpuscles in these, and even to above normal in persons not anæmic, during the exclusive and very slowly progressive administration of antitubercle serum, it being the antitoxine with which I have had the largest experience. It is not an unusual thing for tuberculous patients not too far advanced to assume a more healthy glow under its influence.

Is it then fair to denounce serum therapy on the grounds of results which do show it to be an agency not to be carelessly used? In my judgment it simply shows that it is a therapeutic power which demands at the hands of those who use it very careful judgment and more extensive scientific and practical regard for the laws of physiology



Red blood-corpuscles in man after one month's use of antitubercle serum. The number averaged between 4,800,000 and 5,000,000 to the cubic millimetre.

than is usual, and a fair understanding of the special effects of the new therapy. Serum therapy is, in other words, a means to remedy disease which calls forth the true doctor, and should not be handled by the "rut curist" or the incompetent.

Another phase of criticism is based on the idea that in using serum some fatal or at least dangerous animal diseases, such as glanders and tuberculosis, may be transmitted to man. This is well founded. Glanders has thus been transmitted, if we are to trust reports of the press, but the danger can be wholly avoided. In our laboratory all the serum is filtered through a Chamberland-Pasteur bougie before its use, and consequently no germ of any kind is ever to be found in the serum. This, I understand, is not a precaution taken by all serum producers. In Europe it is said not to be in vogue. However, this danger is remote, as all animals from which serum is used are under observation for some weeks before immunization and tested diagnostically for these maladies.

The danger from toxines produced in serum during other diseases of an insidious nature, such as so-called distemper in its early stage and other constitutional disturbances, is frequent, but the careful observer, taking the temperature of the subject twice daily, and having proper veterinary assistance, can always avoid them.

As to the dangers of blood poison, the serum well preserved, with trikresol, say, is always absolutely safe, and local abscesses depend on the syringe or other causes of infection in the patient or at the hand of the doctor, not on the serum.

Criticisms on Clinical Grounds.—These vary, naturally, according to the disease considered. To arrive at a correct interpretation of serum therapy, one must classify the diseases in which it is applicable under two different heads—viz.: (*a*) "Rapid microbic diseases," running their course

*In treating diphtheria, the physician can not wait, and consequently can not inject progressive doses. This applies in slower diseases.

more or less quickly and causing death by the action of the toxines produced rather than the lesions. Such are diphtheria, tetanus, the various forms of blood poison, typhoid fever, small-pox, etc., in the order named. (*b*) "Slow microbic diseases," such as tuberculosis, leprosy, syphilis, glanders, in which both the toxines and the lesions produced by them and the germs play a most important rôle in the dissolution of the affected being.

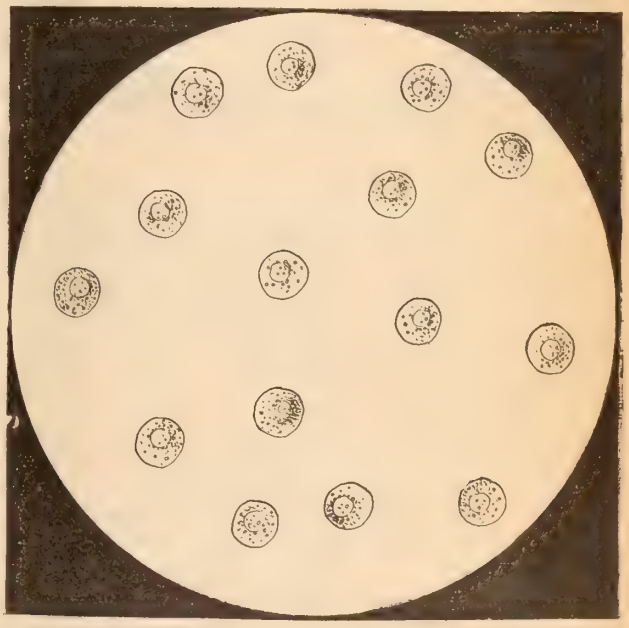
Each of these two classes of diseases, with respect to serum therapy, may in turn be subdivided into various subdivisions with different headings, according to the nature of the complications that may exist. Thus, diphtheria may be pure, or complicated fatally by the action of certain blood-poison germs, which take advantage of weakened tissues to develop, and which produce toxines sometimes more deadly than the original diphtheria poison. The same thing may be said of other rapid or acute microbic affections, which are to-day or may be in the future treated by the use of serum.

The slow infections may be similarly complicated and, unfortunately, some of them are often mixed—for instance, pulmonary tuberculosis. It is very frequently complicated by other germ growths than the bacillus of Koch, particularly in advanced cases. Indeed, it seems sure that in the third and fourth stages pulmonary tuberculosis loses its identity and becomes a pus-germ disintegration which should bear a different name. Do we not find in the expectoration yellow pus produced by special germs? Green pus produced by special germs? And is it not true that all the germs which aid or supersede the bacilli of tuberculosis in destroying lung tissue produce individual toxines?

These mixed infections and the resultant hopeless lesions being proved in all diseases amenable to specific antitoxines, it is clear that such antitoxines, meant to antagonize the toxines of a particular germ, can not antagonize the toxines of any other bacteria, such as the complicating germs. Therefore it must be evident to all who will reflect that the clinical reports of failures by the use of serum in any disease, meant chiefly to reflect badly on serum therapy, are not only valueless, but unjust, misleading, and wholly unwarranted, *if not properly qualified* by clear explanations of the nature of the disease of each case reported, including a concise explanation of all the symptoms, complications, and stage of the malady. Some doctors have unwisely condemned serum therapy in diphtheria on this score, and some are doing the same with respect to serum therapy in tuberculosis, a disease more frequently complicated than diphtheria, which presents in its pathologic developments and destruction a strange "unity without conformity." In pulmonary tuberculosis, for instance, numerous different lesions exist in different cases—hæmorrhages, gray infiltration, yellow infiltration, red hepatization, fibrosis, cavities, scattered tubercles with dense envelopes impermeable to the circulation, and abscesses with yellow or green pus. Only a few of these conditions may be found in a given case, and again all of them may appear in time in a single consumptive. And yet what consideration do they generally receive in the field of general medicine? Little or none. The case is called consumption. The injections of serum or other treatments are instituted, irrespective of special conditions, and often the results thus obtained constitute the foundation for adverse criticism and condemnation. Behring, Maragliano, Roux, and other European investigators have published reports of recoveries from animal and human tuberculosis by the use of serum immunized precisely on the lines followed by your humble servant.*

These facts are often lost sight of quickly, however, when one claims loudly that in his experience (of two or three months, perhaps), and usually in hopeless conditions for treatment (unless by a man guided and controlled by omnipotence) he has failed to cure consumption. And yet, what other field of medicine offers relief for this dreadful plague? True, antitubercle serum is far from perfect, and it will not be until all complications of a microbic character can be reached by it, which may be possible by the use of mixed serums affecting the products of each complicating germ. Furthermore, antitubercle serum can never be expected to act as promptly as diphtheria antitoxine. The diseases are of a different nature and the course of consumption precludes quick recovery. But, if we can show now, after eighteen months of tests, some twenty recoveries of which we know, and nearly as many in the hands of other doctors, including the recovery of all the cases treated at the beginning, does it not show the therapeutic value of serum as compared with other measures, all of which seem to fail? This seems to me a sufficient refutation of the adverse criticisms of serum therapy in tuberculosis on clinical grounds.

Now, as to the explanation of the beneficial results of



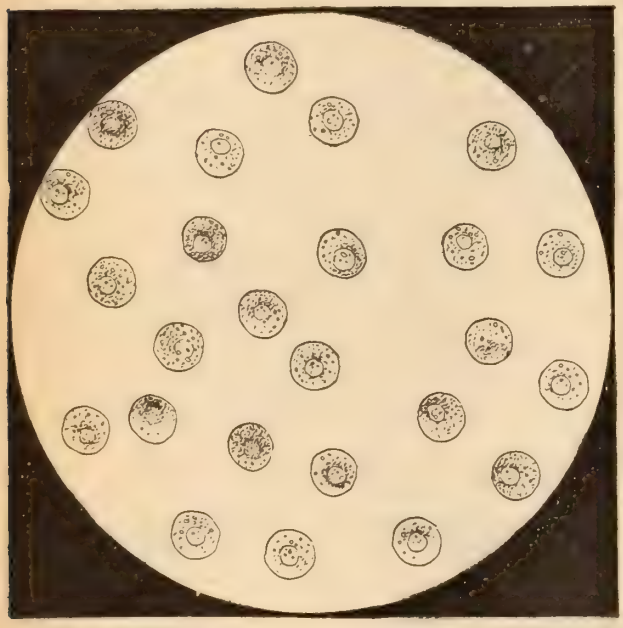
Apparent number of white cells on the slide before the use of antitubercle serum.

serum. These depend unquestionably, in a great measure at least, on increased phagocytosis. Therapeutic serum

* I will append reports of recoveries of which I am cognizant, and I have in my possession the reports of doctors who have arrested tuberculosis with serum exclusively.

does increase the white cells, whose duty it is, in part, to destroy micro-organisms in tissues and their toxines, probably by a process of cellular digestion, or rather a diastatic neutralization. In a tuberculous man of thirty-five years, in whom the white cells were less than 16,500 to the cubic millimetre, they were increased to over 40,000 in seventeen days by a daily injection of two cubic centimetres of antitubercle serum. The following cuts demonstrate the appearance of slides made before and after using the serum that length of time.

I obtained similar results in an infected guinea-pig into which I had injected a foreign diphtheria serum, daily, for three days, in the dose of one cubic centimetre. But the ratio of this effect has not so far proved the same in all the tests made, and sometimes it is very slight.



Apparent number of white cells seventeen days after daily injections of serum.

In conclusion, I beg to say that, in my humble judgment, serum therapy is the only logical and scientific preventive and curative treatment of all the infectious maladies, and it only needs developing and perfecting. It will conquer pure tuberculosis before the development of too serious lesions and general tuberculous phenomena. The serum produced under my supervision has a number of cases improved and recovered to its credit.

Acute Tuberculosis.—Miss V. Z., East St. Louis, Ill.; physician in charge, Dr. J. L. Wiggins, East St. Louis, Ill.; consultants, Dr. J. R. Lemen, St. Louis, Mo., and myself.

Miss V. had been ill several months, prostrated in bed some weeks with a complete history of acute pulmonary tuberculosis. Abnormal temperature, 103° F. to 104° F., almost continually. The physicians consulted diagnosticated acute tuberculous pneumonia. Every ordinary method of treatment had been pursued, and the fever had remained at 104°; it had even reached 105°, with symptoms of delirium, etc. The lungs were both largely involved; consolidation was nearly complete in one. Dyspnœa was excessively pronounced, weakness extreme. Bacilli present. Prognosis fatal. Everything having failed, the serum which I produce was tried. The treatment began early in June, 1895. Dose ranged between twenty and thirty-five or forty minims daily and was continued some six weeks, more or less regularly. The result was that the temperature decreased gradually and steadily after the first seven days' treatment to normal temperature, which was reached on the 22d of June, or thirteen days after the first injection. Injections were continued until the end of July. The patient gradually picked up, gained strength and flesh, and is again at work. She weighs one hundred and thirty-two pounds, whereas she was emaciated to at least eighty pounds before treatment. The germs of tuberculosis have disappeared entirely, and previous symptoms of lung disease are absent. The patient recovered.

R. C. G., St. Louis, aged sixty years; Dr. Lloyd Simpson, St. Louis, was physician in charge; had three consultants, chief among them being Dr. J. R. Lemen, of St. Louis. Diagnosis of all was acute tuberculosis or tuberculous pneumonia. Consolidation of the left lung almost complete, and extensive infiltration of the right. Prognosis, fatal termination. The patient at the beginning of treatment weighed between one hundred and fifty and one hundred and sixty pounds. Serum was continued about three months, more or less regularly every day, at doses ranging between ten and forty minims, after which it was administered irregularly for about two months. The patient suffered, before the beginning of treatment with imperfect kidney secretion. The microscopical examination of the sputum was made first, I am assured, by Dr. Ravold, bacteriologist of the city board of health and of the St. Louis Medical College, and later by Dr. George W. Cale, of the Woman's Medical College, my brother, a chemist, and myself, before, at the beginning, and during the course of the treatment, and in every instance, until after some weeks of treatment, the bacilli of tuberculosis were found in quantities. At the end of three months no bacilli were found in the sputum, and repeated analyses made since by some of the same analysts have failed to reveal them. The patient, who at the beginning of the treatment was in bed, picked up in flesh rapidly, and now weighs over two hundred and twenty pounds. He reports splendid health. Recent physical examinations confirm his opinion. He has recovered.

Chronic Tuberculosis.—Mrs. H. R., St. Louis, consulted me in February, 1895. Had been ill two years. Had had slight hæmorrhages; had coughed, and was coughing very severely, and expectorated a yellowish, muco-purulent material, occasionally tinged with blood. The sputum at the time of examination was full of bacilli of tuberculosis, and largely loaded with different forms of pus germs. There was infiltration in the apex of the right lung between the third and fifth ribs, covering an area of about four inches laterally, and penetrating the lung more or less. There were mucous râles about the middle of this area, very pronounced, and interrupted breathing on both sides. The circulation was exceedingly rapid, and fever ranged usually from 99° F. to 101·4° F.—rarely it went above that. Patient had lost much flesh, being reduced from one hundred and thirty pounds to ninety pounds. At the regular dose of thirty minims a day for four months, and then irregular treatment three or four times a week, with a loss of three weeks at one time, the whole treatment covering a period of six months all told, Mrs. R. improved in flesh to the weight of one hundred and thirty-two pounds, and became strong accordingly. She gained an excellent appetite, and for the last three months her sputum, which is exceedingly scarce now and comes only when she is affected by cold, exhibits no bacilli of tuberculosis. She suffered a miscarriage and six weeks' illness lately, and had the dysentery, during which she lost flesh and strength, but her lungs remained apparently

sound. The physical lung symptoms which existed at the beginning have disappeared.

Mr. E. D., St. Louis, aged thirty-six; occupation, shipping clerk; history of glandular tuberculosis dating back eleven years. Had pneumonia four years previous to his examination in my office, May 16, 1895. Had been declining in health six months; had night sweats and fever; pain in left lung, back and front; pulse, 108 at time of examination. Abnormal temperature ranged from 99·6° to 101°; coughed chiefly in the morning; expectorated a yellowish matter; bacilli present; slept fairly well on the right side, but could not sleep on the left; was too weak to attend to his duties properly. Dullness in the left lower lobe and crepitus at the left apex; interrupted breathing on both sides. All these symptoms disappeared in four months of treatment consisting of fifteen to thirty minims of serum a day. Several examinations of the sputum since revealed no bacilli. Mr. D. is at work twelve and fifteen hours a day, Sunday included, and feels strong and in good health. He did not bear injections of serum well, being often upset; but he has persisted and recovered.

Mr. F. S., St. Louis, came to be examined in February, 1895. He weighed about one hundred and forty-five pounds at the time. Had had very profuse hæmorrhages at Hot Springs, Arkansas, and was sent home, considered hopeless; had lost fifty-five pounds from his regular weight, which was above normal for his size; was coughing a great deal night and day; expectorated a thick, yellowish matter, loaded with the bacilli of tuberculosis and other microbes, and was rapidly losing ground. He was unable to perform any of his duties as a grocery man. Physical condition evidenced tuberculous affection in both lungs, particularly in the right, over the whole of which interrupted breathing was very marked. The lower half of the lung exhibited moist râles and a softening spot. Symptoms, after seven months of more or less regular treatment, which consisted of twenty minims daily in the beginning and was increased to thirty and forty, and once in a while to sixty minims, almost entirely disappeared, with the exception of a slight interrupted breathing. Flesh was regained to the amount of one hundred and seventy pounds, and now his strength is as good as ever. Mr. S. has been at work four months without treatment, attending to his usual duties, working hard every day. He expresses the opinion that he is free from disease. Bacilli now absent, but there is still a slight catarrhal condition of the bronchi with micrococci. His condition of health is continually improving, and active tuberculosis has been arrested by serum.

Mr. F. B. M., St. Louis, aged twenty years; occupation, railroad clerk, working at night; had had bronchitis at the age of fourteen; had suffered from night emissions of early puberty. Previous health feeble; cough scarce; pain in the lower lobe of the left lung; abnormal temperature, 99° to 100° F. Physical examination evidenced dullness of the lower left lobe, beginning at a line drawn below the nipple and extending down toward the base. Microscopical examination revealed the bacilli of tuberculosis, not in large numbers. Mr. M. was treated from May 27, 1895, to the middle of September, practically four months. All physical symptoms and evidences of tuberculosis have disappeared. He is now at work as before and in good health. No bacilli have been found in the examinations since made.

Mr. G. N. F., St. Louis, was examined on April 29, 1895; age, forty-five years; occupation, bookbinder. Had had a dry, hacking cough two years; had had pneumonia at the age of eighteen; congestion of the lungs, so called, two years previous to his examination. On February 7, 1895, he had hæmorrhages which dragged him to bed, and at the beginning of treatment he weighed one hundred and thirty pounds. Expectoration thick and yellowish; bacilli of tuberculosis numerous. Temperature increased at times; infiltration of the left apex below second rib, about three inches downward and four inches across, evidenced both anteriorly and posteriorly; dullness over same region; crepitus over some of the area, and râles and crackling on deep inspiration extending below left breast anteriorly. Mr. F. was treated with tubercle antitoxine from the beginning of May until the beginning of October, almost every day, at the dose of thirty to forty minims. Since then several examinations have been made, and no germs of consumption are to be found. Physical symptoms have now disappeared. The patient is now at work, feels strong, and considers himself cured. He weighs to-day one hundred and forty-three pounds, which is more than his normal weight before his illness.

Miss S., Nashville, Tenn., was admitted to the sanitarium in May, 1895, and remained there under treatment some three months. She came with a written diagnosis of pulmonary tuberculosis from her family physician, which was substantiated by microscopic and physical examination. The bacilli of tuberculosis were found in large numbers, and the patient was rapidly losing ground both in weight and strength, coughing considerably, particularly at night. Expectorated occasionally a yellow, greenish matter. Night sweats had existed, and fever ranged at times from 99° to 102° F. She was treated with serum in daily doses ranging from twenty to thirty minims. After three months she gained ten pounds. She then migrated to Las Vegas, N. M., where she continued the treatment, and her improvement continued. She at first lost flesh there, but again increased, and every vestige of symptoms seems to have disappeared, if I may judge from the reports sent me. Bacilli have not been present for two months.

Miss G. A., St. Louis, aged nineteen years; occupation, music and vocal student. Had had influenza in Memphis six years before; dry cough for a year; weighed one hundred and twenty-three pounds; hæmorrhages four years previous to examination (September 26, 1895); larynx infiltrated; temperature, from 99·5° to 101° F.; coughing considerable, and expectoration of a yellowish matter, chiefly in the morning. Bacilli of tuberculosis quite numerous. Heart disease evidenced by regurgitation. Treatment began the last day of September, 1895. Injected very small doses on account of her heart condition—that is, ten to twenty-five minims daily. At this time Miss A. weighs one hundred and thirty-five pounds. The bacilli of tuberculosis are now absent, and for two months there were but one or two in the field of bimonthly examinations. Cough has almost entirely disappeared. Strength has been regained and appetite is splendid. The patient is considered as having almost, if not quite, recovered, as the physical signs of infiltration and the first signs of breaking down which existed at the beginning of the treatment are absent. There still exists a slight expectoration with micrococci.

Mrs. N., Chicago, aged thirty-three years, married; has a family of six or seven children; began treatment on May 19, 1895, and continued for a period of two months, after which time she went away and reported as being free from disease, her expectoration having ceased and her cough being nil. This patient had been ill two years; had had pneumonia, following an operation for hæmorrhoids. Having had no opportunity of making an examination since this report, I am unable to verify it with personal data.

Mr. V. (employed at our institution), a patient under the charge of Dr. L., had laryngeal tuberculosis and pulmonary

tuberculosis. His condition had been declared hopeless by a number of specialists in St. Louis, including all the leading ones. He has been treated under the special care of Dr. L., and myself occasionally, for a period of about ten months, having received from thirty to one hundred and twenty minims a day. At the beginning of his treatment there existed infiltrations of the larynx and other lesions; he had lost his voice, weight, and strength. He was in a hospital, unable to perform any work. He is now assisting in the care of some twenty-two horses in company with another man, working many hours every day in water and dust, and his appetite has improved and his strength keeps good. He is sensitive and susceptible to colds; but under the treatment with serum he has gained a condition which permits him to do all the menial labor that can be asked of almost any man. Rarely have we found bacilli in the scant expectoration during the last four months. I am unable to say more of this case, because of the fact that he is not a patient of mine, and I do not see him regularly. I report him because he was under my supervision, and the injections were given by my assistants or myself. The case is surely under control at present. Some physicians pronounce him practically cured.

Mrs. A. C., aged twenty-six years, married, has had three children and two miscarriages, one recently, which pulled her down. At the age of fourteen she received a kick in the chest, at which point pain appeared frequently and whenever the patient contracted cold. At her examination infiltration was discovered at the same point, over an area of about three inches in diameter on the right side below the breast; also a dullness in the left lung between the second and third ribs, extending about two inches downward and two inches laterally. She had had the various symptoms of tuberculosis for some years, and dated the accidental incipiency of it fourteen years previously, when she had received this kick at a spot where this consolidation occurred. She had had several hæmorrhages. The active development of the disease dated hree years before my examination, which occurred on June 7, 1895. At that time she weighed one hundred and fifteen pounds; to-day she weighs one hundred and thirty-five pounds. She had dyspnœa, expectorated a great deal, coughed a great deal, and had a very poor appetite. Now all these symptoms have disappeared and her strength has increased, so that she is able to perform her daily duties. She comes to my office almost daily, and expresses herself as improving continually. The physical signs above mentioned have disappeared almost completely. A few bacilli were found once in the last three months.

Surgical Tuberculosis.—B. McG., aged eighteen years and two months, had been suffering with joint and bone tuberculosis for seven years, and had had ten operations performed on different parts of his body to open abscesses and to remove necrosed bone. The seat of the primary trouble was the right hip joint, but was giving him trouble on every limb. The left tibia was much involved, having at one time eight openings discharging what was called a tuberculous pus. The hip had three openings that would heal and open alternately, and one that was open continually for seven years. He had an abscess on each arm, one of the sternum, one of the index finger of the right hand, a tubercular nodule in the skin of the scrotum, an abscess near the apex of the left scapula, and two or three on the lower jaw. The patient says that, after the careful, continued, and conscientious efforts of Dr. J., of Waverly, Ky., who had for consultants Dr. H., of Henderson, Ky., and Dr. A. J., of Sturgis, Ky., to cure the patient had failed, it was decided to let Nature take its course. He was without medical aid for two years. In the fall of 1895 he was put in care of Dr. G. W. Broome, of St. Louis, who performed an operation to remove necrosed bone from the thigh and tibia, thinking that these openings would heal. This having failed, he decided to try the serum treatment, and was taken in charge by Dr. G. W. Cale, of St. Louis. He began the treatment in March, 1895, at which time he had four abscesses discharging mixed pus, and two others that afterward opened. He had daily injections of serum in doses of twenty to thirty minims, and at the close of six months' treatment five of these abscesses had closed, he had gained ten pounds, and was without temperature. All of the abscesses are now closed and have been for months, with the exception of a very slight one on the thigh, and a piece of dead bone, to be soon removed, has been located there, which is the cause of its remaining open. Up to the present time he has gained sixteen pounds, has a good appetite, is enjoying good general health, and works daily.

In every one of these cases the diagnosis was based on careful physical examination and microscopical analysis, and there was no mistake made.

THE MEDICAL AND SURGICAL TREATMENT OF EPILEPSY.*

By FREDERICK PETERSON, M. D.,

CLINICAL PROFESSOR OF INSANITY,
WOMAN'S MEDICAL COLLEGE OF THE NEW YORK INFIRMARY;
PRESIDENT OF THE BOARD OF MANAGERS OF CRAIG COLONY FOR EPILEPTICS;
CHIEF OF CLINIC, NERVOUS DEPARTMENT,
COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK.

The more we study the clinical and pathological manifestations of epilepsy, the more convinced do we become of the manifold character of its causes. It is not truly an essential disease, but a symptom of a great variety of pathological conditions which either remotely or directly, or perhaps in a reflex way, affect the cortical epileptogenic centres. Each patient requires the most rigid examination in order to exclude the many ætiological factors which are at times discoverable in cases appearing at first sight to be purely idiopathic. By such examination we are coming gradually to restrict more and more the number of cases of true, essential, or idiopathic epilepsy in which the pathology and morbid anatomy are still obscure. Our first effort is to exclude an organic cause, such as trauma, tumor, and old meningeal hæmorrhage. It is surprising to observe in how many cases of apparently idiopathic epilepsy symptoms of old meningeal hæmorrhage will be found (congenital or acquired in infancy), varying from idiocy or paralysis, or both, to the merest vestiges of monoplegias or hemiplegias, hemianopsia, imbecility, and the like. Then toxic conditions must be excluded, such as autotoxæmia, alcoholism, and so on, after which we seek for causes of the so-called reflex epilepsy in the genital, nasal, dental, ocular, and gastro-intestinal organs and in old cicatrices. Nevertheless, after the most searching investigation, we shall find in the vast majority of cases of epilepsy no cause whatever. Traumatic cases are rare. Toxic blood states are not at all common. Reflex epilepsy is the most infrequent of all. Indeed, I do not remember to have seen, among several

* Read before the American Medical Association at its forty-seventh annual meeting.

thousand cases, a single one of genuine reflex epilepsy, one that could be proved to be such by the best test of all, a cure under proper medication or surgical procedure. So that, after all, ignorant as we are of the pathology of epilepsy in the immense majority of cases, we must necessarily adopt an empirical method of treatment in almost every patient coming into our hands. I do not propose in this brief paper to more than mention the bromides, borax, belladonna, and other old drugs, which are among the best-known and most familiar remedial agents. It suffices to say that some one of these is necessarily tried, because of its real value, in every case at one time or another, usually with benefit, but rarely with more than temporary amelioration of the disease. Supposing that these familiar agents have been tried, what other remedies have been placed at our disposition by the progress of recent years? It is these to which I wish to draw particular attention.

In the first place, there is simulo, a South American plant of the hyssop family, the tincture of which is given in doses of one to two or three drachms three times daily. After an experience in many cases for several years, I would say of simulo that it deserves trial in most cases; that it is perfectly harmless, which can not be said of the bromides, borax, belladonna, and some other drugs; that in a few cases it has been extremely beneficial in my hands, and that in most cases it has no effect at all.

Solanum carolinensis, or horse nettle, a recently introduced remedy for epilepsy, has in my practice proved of no value whatever.

The so-called opium-bromide treatment of Flechsig is of great use for many patients, especially in old and obstinate cases where all other agents have proved ineffectual. This treatment consists of the administration of opium for some six weeks, beginning with one half to one grain three times daily, and increasing daily until ten to fifteen grains a day are taken, when the use of opium is suddenly stopped and bromides in large and gradually reduced doses are given (thirty grains four times daily to begin with). I had used in certain cases of epilepsy for some years codeine with considerable success, but this combination of the opiate with bromides is still more satisfactory.

Adonis vernalis conjoined with the bromides, as recently suggested by Bechterew, is an efficient method of treatment, from which in several instances I have had gratifying results. Digitalis, which has properties similar to *Adonis vernalis*, was formerly frequently given in epilepsy, but the new combination seems to be much more efficacious.

There are a few cases of epilepsy in which careful investigation indicates self-intoxication as a factor. In these an excess of ethereal sulphates (indican) in the urine, together with periodical or constant attacks of gaseous diarrhœa, are almost positive manifestations of putrefactive or fermentative changes taking place in the alimentary tract. It is remarkable how much benefit may be obtained in such patients by the regulation of the diet (milk and its modifications, kumyss, matzoon, somal, rare or raw beef, eggs, green vegetables, and special breadstuffs, like zwieback, Huntley & Palmer's breakfast biscuits, and Voebt's *biscotte de légumine*); by the frequent drinking of hot water, and the occasional flushing out of the large intestine by hot water; and by the use of certain intestinal antiseptics given two hours after meals, such as beta-naphthol, salol, salicylate of sodium, and peppermint. The remarkable effects of the thyreoid extract upon general nutrition would naturally suggest the advisability of its administration for experimental purposes in some of the nervous diseases which we are accustomed to look upon as due to nutritional disturbances in the nervous system. With this idea in view, I have been treating with thyreoid extract ten epileptic patients selected as showing a specially obstinate form of the disease, and having frequent attacks daily. In all of them there was a loss of weight. In nine of them there was no apparent effect. In one case, however, the result was brilliant enough to justify its trial for a longer time in other cases. In the six weeks now elapsed since the treatment was begun, the patient has had no attacks, although previously, under any sort of treatment, he averaged two or three seizures daily.

This is, in sum, all that I have to say as regards the medicinal treatment of epilepsy. Before speaking of the surgical treatment I should like to say a few words upon the subject of the moral treatment of epilepsy, which, in my opinion, is, in the present state of our knowledge of the pathology of the disease, much more important than either medical or surgical treatment. It is only of late years that the moral treatment of epilepsy has received the consideration it merited. We have been prone to dismiss the unfortunate sufferer from epilepsy with a prescription of uncertain value, and possibly a few general directions as to diet. His greatest needs received no consideration. It was not known to the practitioner, or at least he did not concern himself about the matter, that the epileptic could gain admission to no hospital of any kind; that he had no associates, occupation, or recreation; that, debarred from the schools, he grew up uneducated and with a tendency to retrogression rather than to progress; and that, without teaching, reared in idleness, suffering from a dreadful malady, neglected in body and mind, he could find shelter at last only in the almshouses and insane asylums, these being the only institutions open to him. Yet, in by far the majority of cases of epilepsy, the attacks rob them for but brief intervals of the capacities for study, work, recreation, and social pastimes, which they possess in common with their more fortunate fellow-men. Hence the adoption of a scheme of colonization of epileptic dependents on the model of the great German colony at Bielefeld, of which the Craig Colony in the State of New York is an example. The Craig Colony consists of a tract of nearly nineteen hundred acres of land in the most fertile, productive, and picturesque valley of the State (the Genesee Valley). Upon this are already some thirty to forty buildings, with accommodations at present for but three hundred patients. Over a thousand epileptics are to be placed here in the course of the next few years. Here they are to be given an education in the various branches of learning taught in the public schools, to be instructed in every kind of industry, to be treated each and every one

for epilepsy, and to be offered a home in a sort of village life, where they will no longer have the feeling of social ostracism, or be debarred from the privileges of intellectual and moral development enjoyed by the rest of mankind. I think that I can truthfully say that in the therapeutics of epilepsy this scheme of moral treatment marks the greatest stride in advance that has been made for centuries.

The surgical treatment of epilepsy may be described in two categories—viz.: (1) Operations for the relief of supposed reflex causes, and (2) trephining, with or without the removal of cortical growths or cicatrices.

As regards surgical procedures, it must first be premised and well understood that a cessation of attacks or diminution in their frequency for a few weeks or even months is usual and to be expected from an operation of any sort whatever in this disease. It has been far too common for improvement or even cure to be recorded in cases where surgical interference has been undertaken but a short time before the report was made. It may be stated, therefore, that at least two years, if not three or four, should be allowed to elapse after an operation before the case is reported. It is to be hoped, too, that in future failures will be reported as well as successes, so that a more exact knowledge of the results of surgical treatment may be obtained.

Examining now the first class of operations mentioned, those undertaken for the relief of the so-called reflex epilepsy, they consist chiefly of procedures for the correction of eye defects or insufficiencies, for the relief of genital, dental, and nasal irritation and the like, and for the removal of peripheral cicatrices. While I should be the last to object to the undertaking of any of these procedures in any case of epilepsy where there was the slightest hope of benefit, I believe that we must keep in mind three points in this connection which are of paramount importance.

1. Reflex epilepsy is so rare that the proportion of cases in which a reflex cause will be found is certainly not above one or two in a thousand.

2. In chronic cases where the epilepsy has had its origin in a reflex cause, the convulsive habit has become so strong that removal of the reflex irritation will seldom alter the course of the disease.

3. There are surprisingly few cases on record in which an operation of any kind whatever for the relief of so-called reflex causes has induced a cure of the epilepsy. I think authentic and trustworthy instances of the kind recorded in literature could easily be counted upon the fingers.

Bearing these points in mind, the practitioner may perform his gynæcological operations, circumcise, carry out procedures on the nose, tamper with the eye muscles, or what not, but let him not be too sanguine of a successful issue. He will be fortunate indeed to meet with a single success.

Trephining is not a new procedure in epilepsy, but it is only of late years, since the advent of the new era in cerebral surgery, that a more intelligent diagnostic facility and greater surgical skill have combined to give the operation a higher standing as a therapeutic measure. Simple trephining is resorted to for the removal of a depressed piece of bone. The operation becomes more complicated and dangerous when the membranes are opened and cicatricial tissue in the cortex is removed. I think I am safe in summing up the indications and results of this form of surgical treatment of epilepsy as follows:

1. In about one per cent. of all cases of epilepsy an injury to the head will be found to be the original cause.

2. In a much larger percentage an old meningeal hæmorrhage, congenital or acquired in infancy, giving rise in addition to the epilepsy to various degrees of paralysis, idiocy, or other cerebral symptoms, and presenting, on examination, brain atrophy, sclerosis, and cysts as sequelæ to the primary lesion, will be ascertained to be the cause.

3. In the present state of our knowledge and experience, those cases due to meningeal hæmorrhage should not be operated on at all.

4. In the very small number of cases having injury to the head as a cause, the epileptic habit is so strong and the changes in the brain are usually so old and deep seated that an operation, as a rule, does not cure and only seldom permanently diminishes the frequency of the attacks.

5. Of miscellaneous traumatic cases where a surgical procedure seems justifiable and is undertaken, a cure may be reasonably expected in perhaps four out of every hundred cases operated upon.

6. The removal of a cicatrix from the cortex supposed to be the epileptogenic nidus will naturally be followed by the formation of a new cicatrix in the surgical wound, and is scarcely a defensible procedure.

7. The more recent the injury the greater will be the promise of lasting benefit. If a hundred cases of epilepsy could be selected in which the trauma dated but a few months back, trephining and ablation of the morbid tissues would doubtless prove curative in a very large percentage of cases.

60 West Fiftieth Street.

A CASE OF PROGRESSIVE MUSCULAR ATROPHY OF SUDDEN ONSET.*

By THEODORE DILLER, M. D.,
visiting physician to st. francis hospital, pittsburgh.

William G., a plasterer, aged forty-eight years, came to Pittsburgh Free Dispensary about three years ago. He denied syphilis and intemperance. December 31, 1892, while at work, a swelling, neither painful nor red at any time, developed on the back of the right hand and subsided in the course of three days. The next day he noticed a certain loss of muscular power in the right arm and hand. He stated that this loss of power had continued without increase or diminution from the day he first noted it, but that very soon after the appearance of this paralysis he began to notice some wasting of the shoulder muscles and those of the forearm. This wasting had progressed for several weeks, or nearly up to the time I first saw him. At the time I first saw him there was a distinct but not

* Read before the American Neurological Society at the annual meeting held in Philadelphia, June 3, 4, and 5, 1896.

very great wasting of the right deltoid, and of the group of muscles on the radial side of the right forearm, which was deflected toward the ulnar side. The grasp of the right hand was about one fourth that of the left. There was evident loss of power in the deltoid and in the various movements of the fingers. There was no pain or sensory disorder of any sort in the affected member, nor had there been at any time loss of power or atrophy other than here noted. General health was good. An internal squint existed which, unfortunately, was not examined.

The sudden onset of palsy followed by atrophy and the absence of sensory phenomena led me to diagnosticate the case as one of poliomyelitis adultorum, and I reported it as such in the *Medical News* of October 28, 1893. In the absence of the history of ophthalmoplegia, to be given later, I still regard this as the most probable diagnosis at the time I first saw the patient. Obersteiner,* however, commenting on the case remarks that the diagnosis does not seem to him at all certain.

After an absence of two years the man returned to the dispensary. The atrophy and loss of power in the affected muscles had markedly increased during these two years. The biceps, triceps, scapular, and ulnar groups had become involved. The finer movements of the fingers were lost, as was also the power of supination. He was unable to raise the arm up to a right angle with the body. Wasting and loss of power in left upper extremity were now apparent, chiefly marked in the deltoid, thenar, and radial groups. Indeed, the same muscles were involved, and in about the same degree, in the left arm as had been observed on the right arm two years before, and, in addition the thenar and hypothenar groups. The patient stated that the wasting and loss of power had progressed steadily in the right upper extremity during all the past two years, and that he first felt slight loss of power in the left arm about four months ago, and at the same time had noted some wasting in the left arm and hand. Wasting and loss of power had steadily progressed up to the time of his second appearance at the dispensary; but *the onset was insidious.* For the past five months he has had occasional shooting pains in both arms, at times quite severe. These are the only sensory symptoms he has suffered from during the whole course of the disease. His disability is now so great that he is unable to put on or take off his clothing unaided. There is marked decrease in the response to both galvanism and faradaism in the paralyzed muscles, and in direct proportion to the degree of atrophy present in them.

An internal squint of the right eye, noted at his first visit to the dispensary, was, after this period of two years, seen to be much exaggerated, and led to a close inquiry as to its origin. He stated that, six months prior to the palsy which had appeared in the right hand, he became suddenly aware of this squint upon seeing the reflection of his face in a glass. The squint had slowly but constantly grown more marked up to the present time. A careful examination of the eyes by Dr. G. E. Curry revealed the following features:

There is paralytic convergent strabismus in the right eye, the right external rectus muscle being totally paralyzed. There is slight loss of power in the external rectus muscle of the left eye. The remaining extrinsic muscles are normal. The pupils are normal in size; neither reacts to the strongest light stimulus, nor to accommodative efforts. The vision in O. D. was reduced to one half ($\frac{2}{4}\frac{0}{0}$), but was not impaired in O. S. ($\frac{2}{2}\frac{0}{0}$).

Ophthalmoscopic Examination.—O. S., media clear. There is some disturbance throughout the eye ground in the choroidal pigment, but otherwise no lesions of the fundus. O. D., media clear. Lumen of vessels slightly narrowed, and the optic disc a trifle paler than in O. S.

Remarks.—The beginning of the whole trouble, then, was in this ophthalmoplegia just detailed. Six months after it had started, sudden palsy of the right hand, attended with trophic disturbances and quickly followed by atrophy in the forearm and shoulder, developed. This atrophy and palsy apparently remained unchanged for three months, and then increased and continued to do so steadily for two years, leaving the arm greatly wasted and almost useless. Ten months ago, palsy and wasting of the deltoid, radial, and thenar groups of the left side began *insidiously* and progressed steadily and rather rapidly. There had been no sensory symptoms, except occasional shooting pains in the arms, during the last five months.

In all systematic treatises on nervous diseases with which I am familiar, the slow, insidious onset of progressive muscular atrophy is accounted a diagnostic feature of the first importance in recognizing the disease. Scarcely an exception is allowed to this mode of onset. Under the terms subacute or "chronic poliomyelitis," however, many writers describe a paralysis of gradual or rather quick development, followed by atrophy, and then assuming the progressive type. Many lay stress upon this sudden palsy and subsequent atrophy as features distinguishing these forms of poliomyelitis from progressive muscular atrophy. Gowers,* however, with his usual acumen, clearly states that many of these are really cases of progressive muscular atrophy with a subacute onset. The case I have just reported must, I believe, be fairly regarded as one of progressive muscular atrophy, for certainly the progressive feature was for two years a most important feature of the case. The muscles first affected were those commonly involved in the disease. The involvement of the second arm after the first was characteristic. Indeed, the only atypical features are the ophthalmoplegia (internal and external) and the sudden onset of the paralysis in the right hand, followed quickly by atrophy in the paralyzed part. We have many instances of simultaneous or successive involvement of cranial nuclei and of the neurons in the anterior horns of the cord. Their relationship is well recognized. But ophthalmoplegia as a symptom of progressive muscular atrophy must be rare, for I find but scant references to it in the literature. This may be looked upon as one of the most instructive features of this case.

Just what processes were going on in the cord at the time the palsy so rapidly developed in the right hand it would, of course, be difficult to state positively. But, inasmuch as the symptomatology followed so closely that of poliomyelitis, it is only fair to suppose that morbid changes were taking place in the anterior horns which are known to cause this disease. It can scarcely be doubted that the progressive degenerative changes on which the symptoms of progressive muscular atrophy depend were, for two years at least, going on in the anterior horns of the cervical cord and in the nuclei of the ocular nerves. During

* Sajous's *Annual*, 1895, vol. ii, p. B–21.

* *Disease of the Nervous System*, vol. i, p. 379.

the first period the man was under my care he received galvanism and large doses of strychnine, and during this period the disease apparently made no progress.

Since he came under my care, six months ago, for the second time he has been under the same treatment, and during these past six months I can see no progress in the march of the disease, nor can the patient himself, although he is confident that the progress was constant and appreciable from month to month during the previous two years. I can not escape the conviction that the treatment (chiefly the strychnine) has had a marked effect in staying the progress of the disease.

A CASE OF TETANY.*

By FRANCIS EDWIN PARK, M. D.,
STONEHAM, MASS.

Gentlemen of the Society: I have to present for your consideration to-night a case of a very rare disease which it has been my fortune to have under observation for the past four months and a half.

Previous History.—The patient, Mrs. W., is thirty-seven years of age. Her family history on the whole is good, there being no insanity or other disorders of the nervous system to be found in her direct ancestry, with the exception of her mother, who is quite easily excited. Her previous history, until the age of eighteen, is uneventful. She was a well, healthy girl. Menses began at thirteen years of age, but gave her no trouble. When she was eighteen she was sick twelve weeks of some kind of fever and she had convulsions. The case was evidently a puzzling one, judging from the way they changed doctors. She finally recovered while under the care of an old practitioner, who was treating her for "worm fever." From that time until about two years ago she enjoyed good health, save for very frequent headaches. These came on after using the eyes very constantly, and the pain was generally supra-orbital.

About two years ago she gave birth to a child, was rather long in getting up, and, as she expressed herself, has never felt really well since. Her head and back both troubled her constantly. When the child was nine months old the menses reappeared, and, after some irregularity, settled down to fortnightly periods. Besides this, she had a great deal of worry about the child, who was very sick for a time. When the baby was three months old, Mrs. W. had a convulsive seizure lasting several hours, and from this time on till I saw her she had eight severe attacks. In June the baby, nearly a year and a half old, was taken with the whooping-cough, and the anxiety and worry attendant upon this sickness seemed to be the last straw which broke down the shattered nervous system and precipitated a severe attack. (I also learned on inquiry that she had nursed the child for eighteen months.)

History of the Case.—I saw the patient for the first time on July 12th, about nine o'clock in the forenoon. I found her lying upon the floor in the midst of a tetanic convulsion. There was well-marked opisthotonus; the arms were clasped tightly over the chest; the hands were flexed and the thumbs drawn in; respiration appeared to be suspended, and the face was cyanotic; the muscles of the whole body seemed rigid. After a number of seconds she would catch her breath in a quick gasp, followed by a number of rapid breaths, which in a few minutes would be succeeded by a cramp, beginning in the arms and legs and spreading rapidly until the whole body was stiff. During the continuance of the spasm the jaws were firmly closed, and several times the tongue was caught and bitten. The great danger seemed to be in the diaphragmatic spasm, for this stopped all breathing, and several times it seemed as if she must die before the muscle would relax. One time in particular I felt the pulse grow weaker and more and more intermittent, until it finally stopped under my finger, while the face became deeply cyanosed, but at the last moment there came relaxation, and breathing was re-established. I worked over her for three hours, and at last she became quiet and fell into a profound slumber. The following day she felt quite well, save for the stiffness and pain in the joints.

On the 14th, or two days later, I was again summoned, and found her in the same condition as on the previous day. She was worse if anything, and it was a number of hours before I dared to leave her. The spasms on this day began with a cramplike feeling in the forearm and a tightening sensation about the glottis. Her eyes troubled her very much also, paining her and having a drawn feeling. The cramp rapidly spread upward and soon developed into the complete seizure. After the attack had passed off, there was a great deal of fibrillary twitching of the muscles. I learned at this time that she also had whooping-cough, and had been bothered nights a great deal by it. On the 15th, except for the lameness of the joints, she was apparently all right. Of course, she showed the effects of the strain to which she had been subjected, and was quite weak, but there was no return of the spasm.

On the 16th, early in the morning, she suddenly began to breathe rapidly, and in a few moments stiffened into a convulsion. This attack lasted all day, the interims between the convulsions being but a few minutes. Once during the afternoon, when for a little while it seemed as if the seizure was over, a hot-water bag was placed at her feet, which were very cold. It happened that the covering of the bag had slipped down, and the bare hot rubber came in contact with the soles of the feet. They were jerked away, and immediately the toes were violently contracted; then the legs were bent up on the thigh, and one could see the wave of muscular contraction pass upward until the whole body was in a state of opisthotonus. This spasm was followed by another and another until evening, when she gradually quieted down and the attack ceased.

On the 17th there were no convulsions, but she was very tired; no appetite; tongue coated, and muscles as lame as if she had been beaten from head to foot. The next day she felt better and sat up dressed, and in the afternoon, contrary to my orders, saw some company. On the following day she had convulsions nearly all day. After resting fairly well through the night, the seizures repeated themselves through half of the next day. The following day she had no bad turns and took a little nourishment, slept fairly well with the help of chloral, and through most of the next day was drowsy. Toward evening, however, she had a number of slight attacks. For two days following she gained in strength and was able to retain a little nourishment. On the third morning she began to complain of her eyes, and toward noon had quite a bad attack. The following day was a pretty stormy one, so far as she was concerned, and we had to work over her constantly.

This was the history for a number of weeks, but soon the

* Read before the East Middlesex District of the Massachusetts Medical Society.

attacks began to crystallize, if I may use the expression, about her menstrual periods. The chief violence centred on the three or four days just preceding a semi-monthly period (for such they had been since her menses were re-established), and gradually passed off, so as to give her a few days to rest before they would again start in. Unfortunately, the period of rest was inadequate to repair the damage of the preceding attack, and she was growing daily weaker, being unable at this time to sit up in bed without fainting. This was a definite clew to radical treatment, and by following out this line I was able to reduce the flow of the next period to a slight watery discharge lasting but two days. I was also able to control the spasms fairly well till this brief period was over. We then had two weeks of clear sailing ahead, and I used this time to build her up in every possible way. Two days before her "coming round" again the convulsive attacks returned, but in a less severe form and more tractable as regarded treatment. They subsided within a day or two after the cessation of the menses, and to my great satisfaction we had a full period of four weeks, during which she steadily gained in strength. But the nervous system was still in a very unstable condition, as evidenced by the effects of a sudden fright, and again of nearly tipping over in a chair, when there was a prompt appearance of the symptoms of approaching trouble, which, however, yielded readily to treatment.

The next period began September 2d. There were a few convulsive attacks of a transient character the day preceding the flow, and these yielded quite promptly to treatment. On the evening of the 5th she was taken with an attack of hiccough, which lasted several hours. About 2 A. M. on the 7th I was sent for, and found her in the midst of a very violent attack of hiccough. It was of a most tumultuous character, with no intermission for rest, and frequent vomiting and strangling. For several hours this continued steadily. The heart in the mean time began to grow embarrassed, and finally to skip and beat in a very irregular manner, till I feared very much for her life. I managed to get the attack stopped at last, and about noon she was able to take some nourishment. The rest of this period was uneventful, and at its close she improved rapidly and in a week was able to get outdoors and walk about a little. At the end of two weeks she could ride in a carriage.

On the recurrence of the next period she had one light attack which was promptly stopped, and now she has successfully passed through another, at just four weeks' interval, with no trouble whatever. Just before that time she was able to ride to Melrose, and Dr. A. F. Amadon reported and corrected double hypermetropic astigmatism and muscular insufficiency. (She has passed another period successfully since this paper was written.)

I have tried, in presenting the case before you in a serial manner, to give a clear idea of the symptoms and progress of my patient, reserving treatment and so forth for a later part of the paper.

Diagnosis.—What puzzled me the most was to make a diagnosis. On first seeing her I made a snap diagnosis of hysteria, but on more carefully observing the case I found there was something further than that. In making my differential diagnosis, I had the following diseases to think of: *Tetanus, ergotism, epilepsy, occupation cramp, hysteria, tetany. Tetanus* is thrown out at once by the duration of the disease and the intermittent character of the lockjaw. She had not been taking *ergot* in any form. The convulsions differed from those of *epilepsy* in that there was no throwing about of arms and legs, and that the intelligence was preserved throughout the attack. She was not pursuing any special vocation which could develop *occupation cramp*, and even if she were it would be a local affair. *Hysteria.*—Here we have to pause and carefully compare symptoms, but these are so well marked that even a careless observer, on analysis, can see the difference. In distinguishing from this malady, we must observe: First, the previous history; secondly, the patient's mental condition in the intervals between the attacks; and thirdly, the nature of the convulsions themselves. In the previous history we have the picture of a woman not in good health, quiet, and not given to emotional display. After an attack was over, she was always calm and rational and conversed intelligently about her feelings. During the period of her sickness I saw her daily, during the first half several times a day, and I never saw any indication of an hysterical or flighty nature in anything she said or did. There were times during her bad days when she acted in what a superficial observer would call an hysterical, or rather a crazy manner, but this was only when she was completely intoxicated with ether or chloroform.

The nature of the onset of the convulsions was typical. They generally began with the extremities, either hands or feet, affecting principally the flexor muscles. The arms were drawn tightly across the chest, the hands and fingers were flexed, and the thumbs generally turned in. In the case of the legs, the toes were strongly flexed, and the whole leg was bent up in a most surprising manner. In feeling of the muscles when in the cramped condition, what excited the most surprise was the extreme hardness—an almost rocklike solidity. Usually the muscles of the face were drawn down till the whole countenance was terribly distorted. At such times the jaws were firmly closed and every muscle of the throat and neck was rigid. All through her convalescence she experienced tetanic seizures of individual muscles, which would come on like ordinary cramp.

One last and conclusive test is the reaction to electricity, it being always possible to bring on an attack by strongly exciting the flexor group of the arm or leg. Trousseau's test I did not apply, as I did not consider it necessary to confirm the diagnosis, and the patient was having about as many convulsions as she could endure. It might not be out of place to state here that Dr. William W. Gannett, of Boston, saw the case in consultation, and concurred with me in the diagnosis of *tetany.*

Ætiology.—The ætiology of tetany is at present in a very unsettled condition. I have written this paper in the hope of throwing some light upon that question.

Let me briefly recall the conditions that have militated against my patient:

(*a*) For years she has suffered from headache, with consequent nervous strain, due to astigmatism.

(*b*) For a year and a half she has suffered from a great deal of backache and bearing down. On examination I found abundant cause for this in a badly lacerated perinæum and a chronic endometritis.

(*c*) For many weeks she was intensely anxious about her only child, which they feared would die, and she lost a great deal of sleep; and but a short time before I saw her, the same child was taken very sick with whooping-cough and had broken her rest very much.

(*d*) She herself was at this time suffering from whooping-cough.

(*e*) She informed me that she was a long time getting up from her confinement, and that there was a pretty bad smell to the lochia.

(*f*) Since April 1st she had menstruated every two weeks.

(*g*) She had nursed the baby for a year and a half.

There are two chief factors at present regarded as causing tetany—nervous strain and chronic sepsis. I believe we have both present in the ætiology of this case. In the first place, we have a nervous system hammered at, blow by blow, until it had become so weak that it finally succumbed to the steady absorption of septic matter from a diseased endometrium. As factors in the nervous trouble I consider constant eye strain, from which she had suffered, very frequent and severe headaches for years, the excessive lactation, extending over a period of a year and a half, the reflex strain from her backaches, and the constant debilitating effect of semimonthly menses, to be of prime value. The worry over her child's sickness, its attendant loss of sleep, and so forth, I consider accessory. As regards the absorption of septic matter I am not so certain, yet I feel that the result of treatment, as I shall show farther on, directed to the interior of the uterus, upholds me in the belief that the uterine trouble played no mean rôle and was possibly the final causative agent.

Treatment.—As regards treatment, the list of things tried is a long one. The various forms of antispasmodics, the bromides, hyoscyamine, phenacetine, antikamnia, camphor, valerian, sulphonal, chloral, and morphine, were given faithful trial. As reconstructives and tonics, iron, arsenic, manganese, and strychnine were pushed in full doses.

As regards specific treatment, thyreoid extract, protonuclein, and calcium sulphide were given a fair trial. The whooping-cough was treated with large doses of bromoform and soon ceased to give any trouble. The uterus, in accordance with a suggestion of my friend Dr. A. H. Tuttle, of Cambridge, was treated by having its whole interior painted several times with equal parts of tincture of iodine and carbolic acid, followed by the insertion of a glycerin tampon. Large use was made of both ether and chloroform.

In the matter of treatment, the text-books left me largely in the dark, and I had to feel my way along for some time before I could control the case. Of the drugs above mentioned, as regards direct control of the disease, the only ones from which I could see any benefit at all were chloral, morphine, ether, chloroform, and the iodine-carbolic mixture. The theory on which I successfully used these was: First, to paralyze everything by putting the patient under the effect of an anæsthetic, and then to keep her there for ten or fifteen minutes until a rectal injection of at least thirty grains of chloral in starch (and generally combined with a hypodermic of a quarter of a grain of morphine guarded by atropine) could get in its work. Of course, I gradually worked up to these large doses. Frequently this amount of chloral and morphine had to be repeated within an hour before my aim, sleep, could be accomplished. This treatment was always successful if combined in the way I have mentioned, but it could only be carried out when I could be present. In my absence the nurse gave the chloral injection and warded off the violence of the attacks by a few drops of chloroform at the beginning of each convulsion. Although this did not stop the attack, yet it did much good by preventing the intense muscular contraction of which the patient complained so bitterly.

The patient was kept in a darkened room and had the care of a good nurse throughout. She saw no one save her attendants, and everything was kept as quiet as possible. Special attention was paid to hygiene and diet.

I could see a marked improvement in the whole condition after treating the uterus. By this means I was able to lengthen the menstrual intermission from two to four weeks, and I believe that by it I produced a healthy condition of the endometrium. I believe that this patient's life was saved by it, for up to that time she had grown steadily weaker, but there was a change for the better within a few days of her first treatment, and she improved steadily from that time on.

My experience with this case leads me to suggest the following method of treatment in this disease:

1. Control the spasms by the use of chloroform, chloral hydrate, and morphine.

2. Treat locally every diseased condition that can be found.

3. Pay special attention to hygiene and nutrition.

COMPOUND FRACTURE OF THE SKULL, WITH LOSS OF BRAIN TISSUE.

RECOVERY. EXHIBITION OF PATIENT.

By R. PERCY SMITH, M. D.

On September 5, 1892, Frederick Hanf, aged ten years, was kicked in the forehead by a horse on the farm of his parents, and brought to his home apparently dead. The family physician was hastily summoned, and, after seeing the condition of the patient, I was called in consultation. Upon my arrival I found my colleague thoroughly satisfied that death would soon end the scene, and little disposed to take any steps whatever to repair the damage. Upon examination, I found a compound fracture of the frontal bone, above the right supra-orbital ridge, about three inches in length, and very much the shape of the horse's hoof. Through this opening protruded portions of the brain, and on the boy's hat brain substance was scattered. The heart-beat was scarcely perceptible, and seemed fluttering, so we at once gave a hypodermic injection of nitroglycerin (gr. $\frac{1}{100}$), and in half an hour administered thirty drops of tincture of digitalis. In a short time the heart began to show signs of activity, and we de-

* Read before the Medical and Chirurgical Faculty of Maryland, April 29, 1896.

cided, after some argument, to give chloroform and remove the shattered bone as far as possible. We succeeded in removing a few small pieces, but found the table of bone so firmly depressed from the violence of the blow as to make it impossible to lift it to its proper position. Previous to the administration of the anæsthetic the boy was beginning to regain consciousness, and there seemed no symptom of any paralysis. While at work portions of the disorganized brain ran out, and our calculations were that he lost over an ounce of brain substance. We then thoroughly asepticized the protruding brain substance and wound with bichloride of mercury (1 to 3,000), and by careful manipulation succeeded in getting it back into the cranial cavity. Then a carefully prepared drainage-tube of large size was laid the entire length of the wound, and extending about two inches above and below the injury, and the external soft parts were brought nicely together with silk sutures. A compress, thoroughly soaked in bichloride (1 to 2,500), was then laid over the entire injury, with directions to the nurse to constantly keep it wet with the solution, and the boy was put to bed to *die*, as we reasonably supposed. In this we were mistaken, for at our next visit, twelve hours later, the boy had rallied sufficiently to answer questions intelligently.

We applied no dressing whatever, other than the gauze soaked in bichloride, and ordered Epsom salts until the bowels were thoroughly emptied. Each day thereafter a laxative was administered as a precaution against constipation, which we suspected. A strictly milk or fluid diet was ordered. This treatment was continued for ten days, when it was gradually discontinued. His recovery was uninterrupted, which we considered miraculous at best. No fever or any signs of inflammation showed itself during the entire treatment, and the only point necessary at each visit, we found, was to move the drainage-tube back and forth to allow of the escape of any secretion collected about the point of insertion. The boy in a few months entirely recovered, and has been since attending school, where his teacher informs me he is as capable of learning as ever before.

Comparing this case with the theories of eminent authorities, what do we know, after all, about brain injuries and diseases? It proves conclusively that even in the most severe injuries to the brain, where the patient is young and none of the important centres are involved, we may hope for a satisfactory recovery if the case is treated by the most rigid antiseptic methods. No similar case, no matter how severe the injury, should be entirely despaired of if the most recent antiseptic treatment is strictly enforced.

I am aware that criticisms would be just and proper for my neglect in not elevating the depressed bone, but for the fact of the persistent opposition of the family and friends to any operative procedure in that direction. I was therefore compelled, in deference to the wishes of the relations and others, to employ other than radical measures for relief.

I present the patient to you for your examination, and ask if we may not expect some cerebral trouble in after years when we consider the injury the brain has received and the depressed condition of the frontal bone as it now presents itself. Whether the line of treatment I have indicated was the best is not for me to say, but, judging from the result, I am satisfied we did the best for the patient under the *then* existing circumstances.

Sunny Brook, Md.

ACCIDENTAL MISCARRIAGE FOLLOWED BY PELVIC INFLAMMATION,

LATER BY ABORTION, RETENTION OF PLACENTA, SEPTICÆMIA, AND PYOSALPINX, AND COMPLICATED BY OVARIAN CYST.

OPERATION AND RECOVERY.

By WILLIAM C. WOOD, M. D.,

GYNÆCOLOGIST TO NATHAN LITTAUER HOSPITAL, GLOVERSVILLE, N. Y.

Mrs. X., American, aged eighteen years, peculiarly pale, in November last miscarried at the seventh month. She denies all attempts at abortion. Three weeks later she came to this city and became sick.

When I first saw her she had a high fever, rapid pulse, great pain, and tenderness and bloating over the abdomen, so much so that bimanual examination was unsatisfactory. The pain was referred principally to the left ovarian region.

The treatment was as follows: Free saline purgation, hot vaginal douches, and very hot poultices over the abdomen, renewed every hour. She rapidly improved and declined to have further examinations made, having too lively recollections of the pain caused by the first.

Very quickly she became pregnant again and, while in a neighboring city, had an operation performed for the purpose of "getting rid of it."

On her return to Gloversville she miscarried. The physician who attended her reported everything as all right, as it seemed to be for four days, when she had a chill and severe pain.

I saw her on March 30th. She was much prostrated; pulse, 132; temperature, 102°; with a fœtid discharge from the vagina and a general septic appearance. On examination the uterus appeared to be very large—too large for the fourteenth week of pregnancy—and there was evidently retention of a portion of the secundines. She was immediately removed to the Nathan Littauer Hospital and etherized, the uterus thoroughly curetted, a very large amount of placental tissue removed, and the uterus thoroughly irrigated with sublimate solution, one to four thousand, and afterward plain sterilized water, followed by gauze packing.

The physician who had attended her in the miscarriage stated that he removed at the time what he thought was an unusually large afterbirth.

For two hours the temperature approached the normal mark, then rose to 104°, falling to 101° after the free exhibition of salines and the rectal injection of twenty grains of sulphate of quinine.

For two days she improved rapidly, when septic symptoms again appeared. The packing was immediately removed and the uterus thoroughly irrigated with the sublimate solution every day, and if the temperature called for it twice each day, until it again came down to the normal line.

A strange feature of the case was the entire absence of pain after the curetting; at no time afterward did she complain of pain, and but very little of soreness even when a thorough bimanual examination was made. For a few days she gained rapidly, when the temperature began to rise and fall, varying from hour to hour, the pulse became rapid, the face was drawn, and there was evidence of abscess formation.

High up in the pelvis to the left of the uterus a tumor could be felt plainly from the vagina, while above the pubes it seemed merged with the body of the uterus. On the right side a swollen tube and ovary could be clearly distinguished. The uterus was movable, anteverted, and the tumor moved with the uterus. The pelvic tissues did not seem to be infil-

trated. The abdomen was moderately distended, and the bowels responded promptly to small doses of salines. While there was no doubt as to the diagnosis of pyosalpinx, the tumor puzzled me. If it contained pus, so large an abscess must give rise to greater systemic disturbance; while, if it was a cyst, how could I have overlooked it?

Some days were lost in getting her parents to come, and then in obtaining their consent to an operation. On April 15th, assisted by Dr. Beach, Dr. Edwards, and Dr. Garnsey of the hospital staff, I performed a laparotomy. She behaved so badly under the ether that Dr. Beach warned me I must make haste. On my opening the abdomen there presented a cyst of the left ovary which contained nearly two pints of fluid of a brownish color. This was removed with the aspirator, the cyst wall drawn up into the wound, and the pedicle ligated. Along the lower surface of the cyst was the swollen left Falloppian tube distended with pus. The right tube and ovary, both purulent, were also removed, the abdomen was thoroughly washed out, a gauze drain was placed through Douglas's *cul-de-sac* into the vagina, and the abdomen was closed with a single row of silkworm-gut sutures. The operation, hastily done owing to her bad condition, occupied but twenty minutes, and she was put to bed with seemingly anything but a bright prospect for recovery. She rallied promptly, however, the stomach behaved well, there was no tympanites, the bowels moved freely, and the temperature remained low for several days, when there was again a sudden rise of both pulse and temperature and the old anxious look returned.

I removed the dressings promptly, cut two stitches, separated the edges of the wound, and bored down into the pelvis, letting out about four ounces of stinking pus. This abscess cavity was thoroughly washed out, and packed with gauze, and the patient rapidly began to mend. On May 12th she was sent home, and is now up and about her home, feeling and looking well, there being left but a slight fistula, which discharges but little.

This case I have selected as it illustrates a point. It is such cases that afford the best possible refutation of the critics who, not daring or caring to attempt the surgery of the abdomen and pelvis, seek to decry the efforts of those who do, by covert sneers at meddlesome surgery, unsexing of women, etc. For the above-cited case was treated in the first instance conservatively, in the second and third energetically. After the second abortion, failure to curette would have meant prompt death from septicæmia, and later, when the secondary pus symptoms developed, failure to recognize its presence or timidity in treatment would have meant perhaps a slower, but none the less certain, fatal end.

THE ANATOMICAL CHANGES IN ARSENICAL POISONING.

By WILLIAM MOSER, M. D.,
PATHOLOGIST TO ST. CATHARINE'S HOSPITAL.

In referring to the post-mortem findings in arsenical poisoning, we refer especially to those changes produced by two agents, readily obtainable, and not infrequently used with suicidal intent—viz., Paris green (Scheele's green), an impure arsenite of copper so often employed for killing potato bugs, and a rat poison which, as its name implies, is a little "rough on rats," which contains about fifty per cent. of arsenic mixed with meal (Shoemaker). In autopsies on these bodies the most important alterations are gastro-intestinal. The œsophagus in seven cases, five with Paris green and two with "rough on rats" (occurring the past four years at St. Catharine's Hospital), remained unchanged. The mucous membrane of the stomach is swollen, softened, and contains many punctate hæmorrhages (ecchymoses). Some of these spots are red, others are brown or even black in color. I have usually found the green pigment (Paris green) firmly adherent to the enlarged folds of mucous membrane. There were no ulcerations or perforations.* In two cases there occurred—and to this Virchow has drawn attention—diphtheritic patches. But in the majority of my cases—*i. e.*, five out of seven—there was no diphtheritic exudation either in the stomach or in the intestines. The large and small intestine had a reddened mucous membrane, and it was covered with a large quantity of mucus. The solitary follicles and Peyer's patches were enlarged. Under the microscope the epithelial cells of the mucous membrane are granular and swollen. The condition, then, is one which may be designated as a catarrhal enteritis, in contradistinction to those cases in which diphtheritic patches are formed — diphtheritic enteritis. This diphtheritic enteritis is by no means so constant as in mercurial poisoning, nor has it that predilection for the colon. Virchow has drawn attention to the similarity in post-mortem appearances between arsenical poisoning and Asiatic cholera. In both, the intestines may be filled with "rice-water" fluid. In some cases the clinical symptoms are alike in both (Wood). That constant and characteristic lesions are not always found in arsenical poisoning may be attributed to the preparation of arsenic used and the time in which death occurred. "The gastro-intestinal lesions produced by arsenic are not due solely or largely to its immediate local effect, since they occur equally when the animal is killed by injection of the poison into a vein" (H. C. Wood, p. 385). Salkowski's experiments on rabbits show that when arsenic is given in small doses, so that several days elapse before death takes place, fatty degeneration of the liver and kidneys is the result, even more marked than in cases of phosphorus poisoning. I have only found well-marked fatty degeneration of the liver and kidneys in two cases, while in the remaining granular metamorphosis was seen. But again, the quantity taken and the time in which death took place probably accounts for these differences. In no case was the heart muscle in a state of fatty degeneration. Surely, it could not be compared with the fatty heart seen in pernicious anæmia. The blood and spleen remained unchanged. The pancreas in two cases was studded with punctate hæmorrhages, similar to what occurs in the mucous membrane of the stomach. The organ was the seat of parenchymatous degeneration. In three cases the lungs were congested and œdematous, in three normal, and in one a non-tuberculous pleurisy of the

* In poisoning with white arsenic, small, round ulcers with reddened borders may occur, at the base of which the white arsenic may at times be seen (Langerhans).

right side was seen, which, of course, existed prior to the administration of the Paris green, but is worthy of mention for the reason of the reticulated structure of the exudation, oftener seen in pericarditis than in pleuritis. Arsenic has been detected in the body long after death. It may lead to mummification of the cadaver.

158 Ross Street, Brooklyn, E. D.

ACUTE OTITIS MEDIA AS A COMPLICATION OF TYPHOID FEVER.*

By D. A. HENGST, M. D.,
LARYNGOLOGIST AND OTOLOGIST TO MERCY HOSPITAL, PITTSBURGH, PA.

Inflammation of the middle ear very rarely occurs as a primary disease; it occurs more frequently in a secondary form, or as a complication or sequela of some other disease. That it is a more frequent complication of typhoid fever than is generally supposed, I shall endeavor to demonstrate in this paper.

When we take into consideration the intimate relationship between the mucous membrane of the nose and nasopharynx, the Eustachian tube and middle ear, and the convenient pathway for bacteria from the throat or other parts of the respiratory system through the Eustachian tube to the tympanic cavity, it is not surprising that the proportion of cases is as large as it is.

Catarrhal inflammation of the fauces and the pharynx occurs in a large number of cases of typhoid fever, and frequently gives rise to a great deal of difficultv in swallowing. It is observed more frequently in some epidemics than in others; sometimes it occurs so frequently that some writers have regarded it as a symptom rather than a complication of the disease. When this inflammation extends through the Eustachian tube to the middle ear it may give rise to temporary deafness, which usually passes off as the inflammation subsides, or it may develop into a suppurative otitis and lead to caries of the petrous portion of the temporal bone.

In order to gather some statistics on the subject, I sent circular letters to a number of prominent general practitioners who had large experience in the treatment of typhoid fever, and asked the following questions:

1. How many cases of typhoid fever have you had under your management?

2. How many of your cases were complicated by acute otitis media?

3. At what stage of the fever?

4. Was there any mastoid involvement?

5. Results of the otitis—whether perfect recovery as to hearing, etc.

6. Have you used large doses of quinine in the treatment of your cases?

In answer to the first question, I received enough replies to give me an aggregate of twelve hundred and twenty-eight cases of fever. Out of this number there were twenty-eight cases of acute otitis media purulenta reported. Transitory pain in the ear, with slight deafness for a few days, I did not take into consideration.

Of the aggregate number two hundred cases were from the records of the Mercy Hospital, Pittsburgh, treated in the past two years. Of this number there were six cases of purulent acute otitis, and under my care. Of the whole number, five hundred and seventy-five were cases from private practice. Out of this number there were eleven cases of otitis media—not quite two and a half per cent. Six hundred and fifty-three were hospital cases, with seventeen cases of otitis, or a little more than two and a half per cent., making an average of all cases about two and a half per cent. Dr. Osler writes that during the six years ending May 15, 1895, there were three hundred and eighty-nine cases of typhoid fever in the Johns Hopkins Hospital, and that among those there were eight cases of acute otitis media; Dr. Laurence Turnbull, that out of an approximate aggregate of two hundred and fifty cases of typhoid fever he has had four cases of purulent otitis media. One writer replies that out of sixty-four hospital cases he has had three cases of otitis media. Very few general practitioners keep records of their cases of typhoid fever, and consequently statistics on the subject are necessarily meager.

A number whom I know to have had extensive experience in the treatment of cases of typhoid fever replied that they had never seen the complication. As regards the stage of the fever when this complication is apt to be developed, the replies were, from the end of the second to the fourth week, when the patient is usually in a semi-comatose condition, the capillary circulation is weak and sluggish, and the nasopharynx is filled with tenacious mucus which the patient is not able to expel. The Eustachian tube becomes filled with the same, and as a consequence the otitis is developed.

As regards mastoid involvement, I have been unable to gather any statistics on the subject; all the replies were in the negative. Of my own six cases, one developed an acute mastoiditis, which, however, was promptly relieved by an early and free Wilde's incision, more due to free bleeding than to anything else.

As regards the termination of the otitis, the replies were all favorable—no chronic aural discharge or impaired hearing resulting.

It will be understood that in this paper I am not considering that form of deafness produced by involvement of the internal auditory apparatus which is not uncommon in typhoid fever and occasionally so disastrous to the hearing.

As regards quinine, we all know that if it is given in very large doses it will produce a congestion of the middle and internal auditory apparatus, and thinking that perhaps some of these cases of otitis might have been produced by the administration of quinine in very large doses during hyperpyrexia, I was led to ask the question. The replies were mostly in the negative. One gentleman who reported one hundred and seventy-five cases treated, with five cases of otitis as a complication, replied that it was his practice to use large doses of quinine during hyperpyrexia. Others reported that quinine was only used in tonic doses too small to in any way injure the hearing apparatus.

* Read at the second annual meeting of the American Laryngological, Rhinological, and Otological Society, in New York, April 18, 1896.

Causes.—Among the causes of this complication of typhoid fever could be mentioned exposure of the side of the head to a cold draught of air; carelessness in bathing the patient, using a bath of too low temperature, allowing the water to pass into the nose or into the external ear—all this at a time when the patient has no resisting power—will readily set up an attack of otitis media. But the most usual mode of invasion is by extension of the inflammation from the mouth and nasopharynx through the Eustachian tube to the tympanum, and whenever this inflammation is present in the nasopharynx the patient is in constant danger of otitis. That it is of a microbic origin has been demonstrated. Dr. Gorham Bacon, in his article on Acute Otitis Media, in Burnett's *System of Diseases of the Nose, Throat, and Ear*, mentions the fact that Netter, of Paris, has discovered four distinct forms of acute otitis media.

First. That due to the pyogenic streptococcus of Netter, Zaufal, Moos, Holst, and Dunin.

Secondly. That caused by the pneumococcus of Fraenkel, also recognized by Netter, Zaufal, and others.

Thirdly. That caused by the pneumobacillus of Friedlander and Zaufal.

Fourthly. Otitis associated with the presence of the pyogenic staphylococcus.

Also that Netter has found the *Staphylococcus aureus* associated with the streptococcus or the pneumococcus in four cases of acute otitis media.

In typhoid fever, and especially during the third or fourth week, when the secretions of the nose and nasopharynx are in an abnormal condition, these microbes multiply very rapidly, and it is therefore of the highest importance that the nose and nasopharynx be kept thoroughly antiseptic.

Symptoms.—There are deep-seated pain and tenderness on pressure below the auricle, a feeling of fullness, pulsation, and in some cases tinnitus. On examination of the membrana tympani, vascular injection, especially along the handle of the malleus, and in some cases, though not in every one, bulging of the membrana tympani. There is also more or less well-marked deafness.

In some cases of typhoid fever there is a neuralgic condition of the middle ear in which the pain is very severe. Acute otitis, however, can be distinguished from this by the want of congestion of the membrana tympani in neuralgia, absence of pain on deep-seated pressure below the auricle, and the absence of other signs as recognized by the speculum. Neuralgic pain is also of a more paroxysmal nature. Very often, on account of the semi-comatose condition of the patient, the disease is not recognized until there is a rupture of the membrana tympani and the consequent discharge of pus. This rupture, as in acute otitis from other causes, may occur in a few hours after seizure, but more frequently it occurs after the pain and other symptoms have lasted two or three days. If the membrana tympani is examined before the rupture takes place, bulging and excessive congestion of the membrana will be noticed. If, after the rupture, the pus is carefully syringed away, the ruptured spot, which we find in the posterior part of the membrane, above the centre and near the outer wall of the meatus, can generally be seen. This is where it usually occurs, and is therefore not difficult to heal if properly treated. We are all aware that we very seldom see a case of chronic purulent otitis which is attributed to typhoid fever as the cause. Should this rupture occur in Shrapnell's membrane, the prognosis as regards cure would be a more serious matter.

Inflammation of the mastoid process, as in all other cases of median otitis, is merely an extension of the suppurative process from the middle ear, and is a very rare complication if the primary otitis is properly managed.

Treatment.—As the object of this paper is to discuss the frequency of acute otitis as a complication of typhoid fever, a few words in regard to treatment will be all that is necessary. If the case is seen during the early or hyperæmic stage, it is my custom to apply a leech in front of the tragus; or, if the pain extends to the mastoid, it may be applied in that region. In addition, the instillation into the ear of a warm solution of boric acid, or gently syringing the ear with the same, may be followed by prompt relief, and in many cases prevent suppuration. In some of my cases the use of cold water through the Leiter coil has been beneficial. The ear should be frequently examined, and as soon as the bulging of the drumhead is found it should be incised; after this the secretion should be forced out by the Politzer method; this should be done at frequent intervals, and in addition the nose and nasopharynx should be thoroughly sprayed with a warm saturated solution of boric acid in all cases where the patient is not too comatose to prevent its use. In most of the cases the discharge will cease in a few days with this kind of treatment; if not, then, after thoroughly cleansing and drying the ear, the insufflation lightly of boric acid or some other of the antiseptic powders will usually result in a cure.

My studies have led me to believe that very few cases of acute otitis media when complicating typhoid fever terminate unfavorably—that is, in nearly all cases perfect hearing is the result; also, that mastoiditis is very rare unless the case is not properly treated during its earlier stage; and that in all cases of typhoid fever the condition of the nose and nasopharynx should be carefully examined at frequent intervals, and kept thoroughly antiseptic by either a mild bichloride of mercury or saturated solution of boric acid, used with the atomizer, if the condition of the patient is such as to make it possible.

No. 515 Penn Avenue.

The New York Academy of Medicine.—At the last stated meeting, on Thursday evening, the 4th inst., the following papers were on the programme: The Statistics of Diphtheria, by Dr. C. G. Coakley; Clinical Observations on the Antitoxine Treatment of Diphtheria, with a Report of Personal Investigation of this Treatment in the Principal Fever Hospitals of Europe during the Summer of 1895, by Dr. Joseph E. Winters; Experiences with the Antitoxine Treatment, by Dr. P. H. Ernst; and Diphtheria with and without Antitoxine, by Dr. W. L. Stowell. Dr. William H. Thomson, Dr. George L. Peabody, Dr. A. A. Smith, Dr. John Winters Brannan, Dr. H. W. Berg, Dr. John Dorning, Dr. A. Caillé, and others were to take part in the discussion.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. APPLETON & Co.
Edited by FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, JUNE 6, 1896.

THE PROPER CLOTHING FOR NURSES.

THIS subject is discussed by Dr. Fürst, a Sanitätsrath of Berlin, in the May number of the *Zeitschrift für Krankenpflege*. It is important, he says, that a nurse should be suitably clothed, whether she is at work in a hospital or in a private house—not necessarily as to the outward insignia of her calling, which, indeed, religious and lay organizations have sometimes made fantastic. If a nurse's dress is a matter of importance in cases of non-infectious disease, says Dr. Fürst, of how much greater import is it when she is dealing with communicable maladies! It makes no difference whether it is a member of the family or a trained nurse that attends at the bedside, so far as the hygienic point of view is concerned; in severe cases she is occupied with the patient for day after day, in the most intimate contact with him, continuously exposed to pathogenic material emanating from his person or from his excretions or floating in the air of the room, and she can not avoid handling his linen and that of the bed. She should therefore be dressed in such a way that infectious germs will cling to her as little as possible.

It is well known that the surface of the body, its folds, the fine hairs of the skin, the hair of the head, the fingers, and especially the spaces under the nails are prone to attract pathogenic germs, to hold them fast, and then to convey them to others. This is none the less true of the clothing, on the fine threads and in the interstices of which infectious matter may cling obstinately and long remain active, especially on the outer surface of the clothing. Doubtless the underclothing is of importance also, although little attention is paid to it. We may be sure that it picks up micro-organisms from the patient and cherishes them in a state capable of development in consequence of the warmth and moisture exhaled by the nurse's person. Special garments are therefore necessary; individual taste may be followed to a certain extent, but in essentials the nurse's dress should accord with the rules of hygiene, the maintenance of the utmost possible cleanliness and asepsis. It would be absurd, however, to expect such complete asepsis of a nurse's dress and person as of an operating surgeon's; we must rest content with scrupulous cleanliness, such as conscientiousness may suffice to maintain. It is to be taken for granted that a good nurse will keep her person clean in the highest degree. She should take a full bath at least once a week, and wash herself thoroughly at least twice a day. She should give the greatest attention to her hair, her finger nails, and her mouth, but she must keep her whole body clean, not the uncovered parts only. Her underclothing, too, must be clean, and her cleanliness must not be merely that which would satisfy observation, but it must be actual.

In the clothing, dark colors should be avoided as much as possible, for they do not readily show soiling. Every article of clothing must be taken off and washed with sufficient frequency, especially the underclothing. The corset should not be tight and stiff; if it is it will hamper the nurse in her necessary handling of the patient. The bodice should be soft and yielding, without stiff insets, so as to cause no pressure and not embarrass the breathing or the circulation. In short, the wearer should be free to play her laborious part unrestrained.

As regards the visible clothing, that is open to inspection of the physician and the family, so that it can be controlled in the matter of cleanliness; on that very account is it that self-control is more valuable than inspection by a third person, and it is of much more importance that it should animate the nurses themselves than the directresses of hospital nurses and the lady superiors of sisterhoods. The gown should not be heavily figured, and it should be light in color, so that any soiling may be readily apparent; but of course, considering its daily use, it should not be too susceptible of soiling. For winter, a pale-gray gown of smooth cotton stuff is the best; for summer, one of striped material capable of being washed. Each of them looks appropriate and is suitable. Not only will a dark gown not show dirt, but it is so sombre as sometimes to exert a depressing action on the patient. The garment should be readily washed and disinfected in case of need; to that end, it should be free from all artistic decoration, and should hang smooth, that is, with as few folds as possible. The fabric should be smooth and not too closely woven, for Nikolski has quite recently ascertained that pathogenic micro-organisms live longer in rough, heavy, porous fabrics than in those that are thick and smooth. On this account gowns of woolen are unsuitable for nurses. The garment should fit close at the throat and at the wrists, and it should not touch the floor. The foregoing specifications need not forbid the wearing of a becoming gown.

In order to preserve the gown, from the point of view of economy, it may be wholly covered with an overdress, made of material that is white, smooth, and closely woven, but not too heavy, easily washed—a solid cotton texture without an artificial gloss, but with some natural gloss that will stand washing. It should be closed in front and tied behind. It should not be too high in the neck, but should leave a little of the gown visible, but at the wrists it should cover the sleeves of the gown. It should be gathered at the waist with a girdle. It should be quite plain in front, save for a watch-pocket and two side-pockets. Like the gown, it must not touch the floor.

The wearing of this overdress seems to Dr. Fürst quite as important in domestic as in professional nursing, and he pictures the case of a child with scarlet fever nursed by its mother, who, while devoting almost all her time to the sick

one, is yet unable to absent herself altogether from the rest of the household. By divesting herself of this outer garment and washing her hands, hair, and gown in a one-to-three-thousand solution of corrosive sublimate she may present herself outside the sick-room with little or no danger of communicating the disease. This garment is superior to rubber aprons in that it covers the entire gown and does not interfere with due cutaneous transpiration. Shaking and beating are not sufficient to cleanse this garment, but it should be hung in the sunlight in the open air, and for this purpose the nurse should have two or three, so that she can change often enough. In default of sunlight, the overdress may be washed in soap and water containing five per cent. of lysol and ironed.

For the headgear, a light white turban may be worn, sufficient to cover the chief bulk of the hair without heating the scalp; cambric is the best material for the purpose, for it is easily washed and disinfected. It may be held in place with an elastic. In cases of infectious disease, it should be left in the sick-room when the nurse goes out. On coming back to the sick-room, the nurse should take off her street shoes and put on dry ones or slippers something like lawn-tennis shoes, which may be disinfected without being injured. Moreover, they are noiseless, which is worth considering in the case of sensitive patients.

It must be admitted, we think, that Dr. Fürst has dealt with a subject that is by all means worthy of much thought, and that his suggestions are wise.

MINOR PARAGRAPHS.

THE INSANITY LAWS OF THE STATE OF NEW YORK.

Mr. John F. Montignani, of the Albany bar, has compiled the State statutes relating to the insane and to institutions for their care and treatment, in the form of a pamphlet of 120 pages which includes also the official orders and regulations of the State commission in lunacy. An index renders it easy to find particular points in the laws and regulations.

THE CHOCOLATE PLANT.

The firm of Walter Baker & Co., of Dorchester, Massachusetts, the well-known producers of excellent chocolate products, has done for the chocolate plant what M. Mariani has done for the coca plant—compiled interesting facts and traditions relating to the natural history of the plant and to the chocolate industry, and published them in the form of an attractive brochure.

ITEMS, ETC.

The Right of Foreigners to Practise Medicine in France.—The *British and Colonial Druggist* says that nearly all the medical students resident in Paris hospitals have passed resolutions to the effect that doctors' diplomas should be conferred on persons from abroad who have attended lectures in the French schools, without, however, giving those persons the right to exercise their profession in France. A further resolution sets forth that no foreigner ought to be allowed to practise in France unless he is naturalized, has done his military service there, and has passed examinations for the degree of bachelor of arts. These resolutions, which were passed some weeks since, have been forwarded to the Minister of the Interior, who is asked to submit them to the Government.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending June 2, 1896:

DISEASES.	Week ending May 26.		Week ending June 2.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	6	0	11	2
Scarlet fever	101	12	81	4
Cerebro-spinal meningitis	3	4	2	1
Measles	389	19	292	11
Diphtheria	331	51	250	33
Tuberculosis	154	129	175	111
Small-pox	0	0	0	0

The American Association of Genito-urinary Surgeons.—At the recent annual meeting, held in Atlantic City, New Jersey, officers for the ensuing year were elected as follows: President, Dr. Francis S. Watson, of Boston; vice-president, Dr. J. William White, of Philadelphia; secretary, Dr. William K. Otis, of New York.

A Civil Service Examination.—On June 15th the New York city civil service boards will hold an examination at 10 A. M. for the position of assistant resident physician under the board of health. Citizens of the United States holding the degree of M. D. are eligible to this examination, and may obtain application blanks by addressing Mr. S. William Briscoe, secretary, New Criminal Court Building, New York city.

The New York Post-graduate Medical School and Hospital.—Dr. Robert Abbe has resigned his professorship of surgery.

The Death of Sir J. Russell Reynolds, M. D., F. R. C. P., of London, took place on Friday, May 29th. He was sixty-eight years old.

The New York Eye and Ear Infirmary.—Dr. W. K. Simpson has been appointed surgeon to the throat department.

Change of Address.—Dr. Gouverneur M. Smith, to No. 52 West Fifty-fifth Street, New York.

Society Meetings for the Coming Week:

Monday, *June 8th:* New York Academy of Medicine (Section in General Surgery); New York Academy of Sciences (Section in Chemistry and Technology); New York Medico-historical Society (private); New York Ophthalmological Society (private); Lenox Medical and Surgical Society, New York (private); Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society.

Tuesday, *June 9th:* Massachusetts Medical Society (first day—Boston); Oregon State Medical Society (first day—Portland); New York Academy of Medicine (Section in Genito-urinary Surgery); New York Medical Union (private); Buffalo Academy of Medicine (Section in Medicine); Kings County, N. Y., Medical Association; Medical Societies of the Counties of Chenango (semi-annual), Erie (semi-annual—Buffalo), Genesee (annual—Batavia), Oswego (an-

nual—Mexico), Rensselaer, Schenectady (semi-annual—Schenectady), Warren (annual—Lake George), and Wyoming (Warsaw), N. Y.; Newark (private) and Trenton, N. J., Medical Associations; Clinical Society of the Elizabeth, N. J., General Hospital and Dispensary; Northwestern Medical Society of Philadelphia; Practitioners' Club, Richmond, Ky.; Richmond, Va., Academy of Medicine and Surgery.

WEDNESDAY, *June 10th:* South Dakota State Medical Society (first day—Yankton); Kentucky State Medical Society (first day—Lebanon); Massachusetts Medical Society (second day); Oregon State Medical Society (second day); New York Pathological Society; American Microscopical Society of the City of New York; Medical Societies of the Counties of Albany, Dutchess (semi-annual—Poughkeepsie), Montgomery (semi-annual—Fonda), and Sullivan (annual—Monticello), N. Y.; Middlesex, N. J., County Medical Society (annual); Rhode Island County Medical Society (annual—Providence); Philadelphia County Medical Society.

THURSDAY, *June 11th:* South Dakota State Medical Society (second day); Kentucky State Medical Society (second day); Society of Medical Jurisprudence and State Medicine, New York; Brooklyn Pathological Society; Medical Societies of the Counties of Cayuga, Cortlandt (annual), and Fulton (semi-annual), N. Y.; New York Laryngological Society; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia.

FRIDAY, *June 12th:* South Dakota State Medical Society (third day); Kentucky State Medical Society (third day); Brooklyn Dermatological and Genito-urinary Society (private); German Medical Society of Brooklyn; Medical Society of the Town of Saugerties, N. Y.; Cleveland Medical Society.

SATURDAY, *June 13th:* Obstetrical Society of Boston (private).

Births, Marriages, and Deaths.

Married.

CAMPBELL—JAMES.—In Shreveport, Louisiana, on Wednesday, May 27th, Dr. R. C. Campbell and Miss Fannie James.

POOLER—PADDOCK.—In New York, on Tuesday, June 2d, Mr. Louis J. Pooler, son of Dr. J. A. Pooler, and Miss Annie G. Paddock.

VANDERPOEL—BUCKMASTER.—In Brooklyn, on Thursday, May 28th, Mr. Isaac Vanderpoel and Miss Minnie Buckmaster, sister of Dr. A. H. Buckmaster, of the University of Virginia.

Died.

JOHNSON.—In Lowndesville, South Carolina, on Saturday, May 23d, Dr. J. C. Johnson, in the fortieth year of his age.

Letters to the Editor.

EXTRAGENITAL CHANCRE.

No. 305 DIVISION STREET, CHICAGO, *May 25, 1896.*

To the Editor of the New York Medical Journal:

SIR: During my five years' experience in the practice of medicine it has been my fortune to meet with a number of cases of primary hard chancre situated in unusual places. I wish to report the following cases, viz.:

CASE I.—A young man, aged twenty-five years, consulted me for a large indurated growth on the index finger of the right hand. It was located on the terminal phalanx. The growth was not painful and, being a clerk, he was in the habit of trimming the rough surface with a penknife. The glands of the arm above the elbow were enlarged, but not painful. I pronounced it a case of syphilis. The man remained under my care nearly three years. He had deep ulceration of the pharynx, the tonsils, and the soft palate, with perforation of the hard palate, also syphilitic alopecia.

CASE II.—A young man, about twenty-eight years of age, consulted me for a large indurated sore of the index finger of the right hand. He had already consulted a physician, who pronounced it a hard chancre. The induration was situated on the second phalanx and was bathed with a purulent secretion. The glands above the elbow were enlarged and slightly tender on pressure. He remained under my care a little more than a year. During this time he had deep ulceration of the faucial tonsils and syphilitic alopecia.

CASE III.—A young girl, aged thirteen years, came to my clinic with a large indurated sore of the uvula. The uvula was about an inch and a quarter in length, presenting an ulcerated surface bathed with a sero-purulent secretion. The upper deep cervical glands were enlarged, and she complained of some pain on swallowing. She remained under my care four months. During this time there were some mucous patches in the mouth and on the tonsils and a moderate falling of the hair.

CASE IV.—A young man, aged eighteen years, consulted me for a sore on the tip of his tongue. The induration was not great, but the submaxillary glands were much enlarged and quite painful. The mouth was thickly studded with mucous patches and there was some deep ulceration. This young man has been under my care about fifteen months. During this time there have been syphilitic alopecia, syphilitic eruption of the skin, syphilitic onychia of the finger nails, and intense syphilitic headaches.

CASE V.—In June, 1894, a middle-aged man, the father of three healthy children, called me to see his wife. He said she had a cancer of the lower lip. Examination showed a red, glazed induration of the lower lip of about the size of a small English walnut. The submaxillary glands were much enlarged—of the size of a hen's egg. The woman was in her ninth month of pregnancy. Her child was born about the middle of July and was free from disease. The husband, at the time of my first visit, had mucous patches in his mouth and syphilitic alopecia. Later the wife had mucous patches in her mouth and alopecia. She remained under my care a little more than a year.

The child escaped infection, owing chiefly, as I believe, to the fact that I gave the mother daily douches of 1-to-2,000 bichloride-of-mercury solution before the birth of her child and forbade her nursing it. The child was reared by artificial feeding with cow's milk, and escaped syphilis while I kept the mother under observation.

CASE VI.—A married woman, aged eighteen years, came to my clinic complaining of intense headaches, some alopecia, and ulceration of the mouth. Examination of the mouth revealed mucous patches. I asked her whether she did not have some sores on the genital organs, and she said she had none. At the same time she called my attention to an indurated sore just above the right knee. The sore was of about the size of a large pea, free from tenderness on pressure. The superficial inguinal glands below Poupart's ligament were

enlarged and not painful. She remained under my care for six months, and my diagnosis of syphilis was abundantly verified.

Besides these six cases occurring in my practice, I have seen three cases of hard chancre of the lower lip. These were associated with buboes of the submaxillary glands.

The four cases of chancre of the lower lip were communicated by kissing, and Case IV was contracted while smoking the pipe of a man afflicted with syphilis.

All the cases reported were undoubted cases of syphilis, and the primary chancres were at the places designated. In each case my diagnosis was confirmed by competent physicians.

E. D. Smith, Ph. C., M. D.

BALSAM OF PERU IN THE TREATMENT OF SCABIES.

Oxford, N. C., *May 30, 1896.*

To the Editor of the New York Medical Journal:

Sir: In your issue of May 23d, under the heading Balsam of Peru in the Treatment of Scabies, Dr. S. E. Campbell, of Saginaw, Mich., is said to have referred to mention made of this use of the remedy by Waring in his *Therapeutics*. Waring does not speak of balsam of Peru as a remedy for scabies, but of balsam of copaiba, and relates that Dr. Monti, of Vienna, used it in twenty-seven cases and in each effected a complete cure.

G. A. Coggeshall, M. D.

Proceedings of Societies.

AMERICAN MEDICAL ASSOCIATION.

Forty-seventh Annual Meeting, held in Atlanta, Ga., on Tuesday, Wednesday, Thursday, and Friday, May 5, 6, 7, and 8, 1896.

The President, Dr. Beverly Cole, of San Francisco, in the Chair.

(*Concluded from page 657.*)

Vivisection in the District of Columbia.—The following preamble and resolutions were offered by Dr. Senn, chairman of the committee on the subject:

Whereas, The members of the American Medical Association recognize the fact that the development of scientific medicine has resulted largely from experiments upon the lower animals; and whereas anæsthetics are habitually administered to animals subjected to painful experiments; and whereas restrictive legislation is in our opinion unnecessary and opposed to the continued progress of medical science; and whereas it is an unjust reflection upon the humanity of those engaged in animal experimentation to enact laws requiring them to use anæsthetics and appointing inspectors to see that they do so; and whereas far more unnecessary pain is constantly being inflicted upon the lower animals for sport and for game than in biological and pathological laboratories; and whereas no evidence has been presented by those who advocate restrictive legislation showing that abuses exist in the District of Columbia; and whereas results of great practical importance have been attained by experiments on the lower animals in the Government laboratories in the District of Columbia; therefore be it

Resolved, That the American Medical Association earnestly protests against the passage of Senate Bill No. 1,552, entitled: "A bill for the further prevention of cruelty to animals in the District of Columbia," or any modification of this bill, unless it shall first be shown by an impartial investigation that cruel and unnecessary experiments are being performed in the District of Columbia, and that existing laws do not provide suitable punishment for cruelty to the domestic animals.

Resolved, That copies of these resolutions, attested by the signatures of the president of the American Medical Association and of its committee appointed to draft these resolutions, be sent to the chairmen of the committees on the District of Columbia in the House of Representatives and Senate of the United States.

On motion of Dr. E. D. Ferguson, of Troy, N. Y., the resolutions were adopted.

The Jenner Centennial Celebration.—Papers relating to vaccination, by Dr. N. S. Davis, of Chicago, Dr. C. N. Hewett, of Red Wing, Minnesota, Dr. J. Cochran, of Alabama, Dr. George M. Sternberg, of the army, Dr. F. C. Martin, of Boston, and Dr. Eugene Foster, of Augusta, Georgia, were read.

The Address in State Medicine was then delivered by Dr. George H. Rohé, of Baltimore, on the subject of *The Purification of Public Water Supplies*. At the outset the speaker stated that the most vitally important sanitary problem confronting American municipalities at the present day was, unquestionably, the supply of pure water for drinking and other domestic purposes. The widespread prevalence of typhoid fever might be practically looked upon as a measure of the pollution of the drinking water. Depending, as this disease did, almost entirely upon an infected water supply, the importance of having the latter of a pure quality is self-evident. In 1894 twenty-five of the principal cities of the United States had an average typhoid-fever mortality of 39·6 for each hundred thousand of population. Those cities which had the largest mortality from this disease were supplied by a highly suspicious quality of drinking water.

It would be hardly necessary at the present day to insist upon the ætiological relation of infected drinking water to typhoid fever. The numerous epidemics in this country and abroad, which had been studied with so much care by eminent sanitarians, had demonstrated this relation. While cases doubtless occurred in which the disease could not be traced to the water supply, they constituted the vanishing minority, the overwhelming majority being unquestionably due to infected water.

In epidemics of cholera a similar relation existed between the outbreak and extension of the disease to an infected water supply. Aside, however, from the production of these specific diseases, pure water, or water free from all sorts of uncleanness, was demanded by the "sanitary conscience" of the public.

In sparsely settled districts, or where a supply of unpolluted water could be brought from a distance to a large community, it would probably be better to secure such a pure supply rather than purify a source of supply which has been polluted; but in the majority of instances, particularly in the eastern and central sections of the country, the procuring of such an unpolluted supply was practically barred by financial considerations. We were therefore reduced to one of two alternatives—either to limit as much as possible or to altogether prevent, which was practically impossible, the access of impurities (notably of sewage or excremental matter) to the sources of supply, or else to resort to some method of purification of the water after it had become polluted.

The city of New York had recently chosen the first alter-

native mentioned, by the purchase of ground immediately bordering on the streams furnishing the drinking water to that great metropolis. By the removal of sources of pollution from the area of land so acquired, the endeavor had been made to secure a pure drinking water. He had not at hand the figures showing the amount of money expended in order to accomplish this purpose, but the sum must have been extremely large. In Chicago the extraordinary outbreak of typhoid fever from 1889 to 1893 had led to the extension of the intake pipes in Lake Michigan to a distance of four miles from the shore, and the constant diminution of the sewage contamination had reduced the typhoid-fever mortality from 159·7 in a hundred thousand in 1891 to 31·4 in 1894.

A great impetus to filtration had been given by the experiments conducted under the auspices of the Massachusetts State Board of Health in Lawrence, carried out so thoroughly by Mr. Hiram F. Mills and Mr. Allen Hazen. These experiments, conducted with painstaking care for a number of years, proved conclusively that water, no matter how polluted, could be rendered pure by simply filtering it through sand filters, provided certain cautions were observed regarding the construction of the filters, the rate of filtration, and other conditions varying with the character of the water to be purified.

For many years filtration through sand had been used by European municipalities to secure the purification of water. In London most of the drinking water had been filtered for upward of forty years. The filter beds of Berlin covered an area of more than thirty acres. In many of the Continental cities the drinking water was subjected to filtration. The construction and practical management of filters had been investigated with great care. Comparative studies of the efficiency of sand filters and of various processes of so-called "mechanical filtration" had been made recently in Providence, Rhode Island, and in Lawrence, Massachusetts. While the results obtained by different investigators had not been in entire agreement, the prevailing opinion of sanitarians and engineers was that sand filtration, where it could be adopted, gave the best results in purification at the lowest cost of construction.

The Association's Journal.—Dr. Alonzo Garcelon, of Maine, offered the following resolution:

Whereas, This association has authorized the trustees to establish a building fund; and, whereas the question of a permanent location for the *Journal* has never been decided by a vote; therefore be it

Resolved, That the trustees be, and are hereby instructed, to cause a vote by ballot to be taken, and on this question all members shall have the right to vote. The ballots may be received from and after June 1st until July 31st, when the ballot shall close. No ballot shall be counted in favor of any particular place unless the name of the member voting shall be signed thereto. The ballot shall be preserved by the trustees until the next annual meeting of the association, but the result shall be published in the *Journal* when the count shall have been completed. The resolution was adopted.

The Next International Medical Congress.—Dr. Senn, chairman of the committee on the president's address, presented the following resolution:

Resolved, That the secretary of this association be requested to inform the secretary-general of the next International Medical Congress that, unless the English language is fully recognized, this association declines to send delegates. Adopted.

The Report of the Committee on Nominations was then read by the chairman, Dr. H. A. West, as follows: For president, Dr. Nicholas Senn, of Chicago; for vice-presidents, Dr. George M. Sternberg, of the army, Dr. Edmond Souchon, of New Orleans, Dr. J. B. Thomas, of Pennsylvania, and Dr. Willis F. Westmoreland, of Atlanta; for treasurer, Dr. H. P. Newman, of Chicago; for assistant secretary, Dr. F. F. Schneidman, of Philadelphia; for librarian, Dr. George W. Webster, of Chicago; for chairman of the committee of arrangements, Dr. H. A. Hare, of Philadelphia; for trustee, to fill a vacancy, Dr. G. C. Savage, of Nashville; for trustees, Dr. E. E. Montgomery, of Philadelphia, Dr. J. M. Mathews, of Louisville, and Dr. C. A. L. Reed, of Cincinnati; for members of the judicial council, Dr. George W. Stoner, of the Marine-Hospital Service, Dr. C. W. Foster, of Maine, Dr. J. McF. Gaston, of Georgia, Dr. I. N. Quimby, of New Jersey, Dr. H. Brown, of Kentucky, and Dr. X. C. Scott, of Ohio; the address in surgery to be delivered by Dr. W. W. Keen, of Philadelphia, that in medicine by Dr. Austin Flint, of New York, and that in State medicine by Dr. J. Cochran, of Alabama. On motion, the report was adopted.

The next meeting will be held in Philadelphia, beginning on the first Tuesday in June, 1897.

Book Notices.

Injuries and Diseases of the Genital and Urinary Organs. By Henry Morris, M. A., M. B. Lond., F. R. C. S., Surgeon to and Lecturer on Surgery at the Middlesex Hospital, etc. With Ninety-seven Illustrations. New York: William Wood & Co., 1895. Pp. xvi–478.

As a general rule, articles, monographs, and books on genito-urinary diseases and surgery written by the general surgeon are more or less wanting in many particulars, chiefly the broad clinical lines and general considerations, and this volume forms no exception. Its general style is loose and diffuse. Its arrangement is unsystematic, and the loosely jointed text is burdened with descriptions of cases in which the most useless and irrelevant details are given. The perusal of a chapter or chapters is rendered trying by reason of the halting tone and the desultory manner in which subjects are handled.

The chapters on injuries of the penis and rupture of the urethra are far better than the remaining sections. The chapters on epididymitis, affections of the testes, of the spermatic cord, and of the seminal vesicles are so poor that one wonders that they came from the pen of the man who wrote the work on the *Surgical Diseases of the Kidneys*. A like criticism is warranted of the sections devoted to the treatment of most of the surgical subjects, such as the operations for cancer of the penis, for phimosis, for varicocele, and for hydrocele, and it may be added that nothing in the book is more disappointing than the remarks on the treatment of stricture of the urethra.

Obstetric Accidents, Emergencies, and Operations. By L. Ch. Boisliniere, A. M., M. D., LL. D., Late Emeritus Professor of Obstetrics in the St. Louis Medical College, etc. Profusely illustrated. Philadelphia: W. B. Saunders, 1896. Pp. 11 to 381. [Price, $2.]

In the preface of this little book the author states that it is not a treatise on midwifery or a manual of obstetrics. "It is intended," he says, "for the use of the practitioner who, when away from home, has not the opportunity of consulting a library or of calling a friend in consultation."

The work is divided into three parts: Part I, Accidents to the Woman; Part II, Obstetric Operations; and Part III, Accidents to the Child.

One can not but feel, although the author states in the preface that this is not "a manual of obstetrics," that there is little more in it than is contained in the better manuals, and we doubt very much if this work would take the place of "a friend in consultation."

As a superficial outline of obstetrics, it is very good, and to those students or young practitioners who know the author's methods we can readily believe that it will be acceptable, but in general we would urge that there is too much of this sort of summarizing and too little original work done.

The Johns Hopkins Hospital Reports. Volume V.

The customary excellence of these reports is maintained in this volume, which contains 481 pages of most valuable matter.

Dr. William Sidney Thayer and Dr. John Hewetson contribute an exhaustive article of 218 pages upon the malarial fevers of Baltimore, based upon an analysis of 616 cases of malarial fever.

If the reader wishes to learn all that is now known about the *Plasmodium malariæ* he will find it in these pages.

Lewellys F. Barker, M. D., contributes an article of 50 pages entitled A Study of Some Fatal Cases of Malaria. This is based upon a very careful study of four cases with autopsies, and is illustrated with four plates, three in colors.

Dr. William Osler, Dr. George Blumer, Dr. Simon Flexner, Dr. Walter Reed, and Dr. Harold C. Parsons contribute articles amounting to 180 pages entitled Studies in Typhoid Fever, all of which deserve careful perusal. Of these, Five Years' Experience with the Cold-bath Treatment, by Dr. Osler, and Post-typhoid Bone Lesions, by Dr. Parsons, are especially interesting.

The whole volume contains studies so exhaustive and so minute as to prohibit detailed criticism, but it will be found a valuable addition to any medical library.

Don'ts for Consumptives; or, the Scientific Management of Pulmonary Tuberculosis. How the Pulmonary Invalid may Make and Maintain a Modern Sanatorium of his Home, with Additional Chapters descriptive of how every Consumptive Person may apply the Forces of Nature to assist and hasten Recovery, and also how the Defects of Heredity may be Best Overcome. By Charles Wilson Ingraham, M. D., of Binghamton, N. Y. February, 1896. Pp. xviii–21 to 218.

This little book is intended to reach the laity, and, while much more elementary than Dr. Playter's book, it contains much sensible advice.

Consumption: Its Nature, Causes, and Prevention. With an Outline of the Principles of Treatment. For all Classes of Readers. By Edward Playter, M. D., Member of the Canadian Medical Association, etc. Toronto: William Briggs, 1895. Pp. viii–9 to 343. [Price, $1.50.]

This is a remarkably interesting book, in which the whole subject of consumption is treated of in a clear and able manner. It fully carries out the desire of the author to reach all classes of readers—professional and non-professional. While sufficiently complete and scientific to satisfy the needs of the physician, it is written so simply as to enable the layman to comprehend it with ease. It is time that the general public should be fully educated as to the nature of tuberculosis and the methods of avoiding the disease, and this book will help on the work.

The Medical Inspection of and Physical Education in Schools. By Charles Roberts, F. R. C. S. Eng., L. R. C. P. Ed. [Reprinted from the *Report of the Royal Commission on Secondary Education.*]

The topics treated of in this admirable monograph are already exciting considerable interest in this country, and physicians and educators who desire to contribute to the practical solution of the problems involved, and, indeed, all friends of education and of hygiene, will find the facts and deductions here so clearly and concisely presented almost indispensable to their proper equipment.

BOOKS, ETC., RECEIVED.

A Manual of Anatomy. By Irving S. Haynes, M. D., Ph. B., Adjunct Professor and Demonstrator of Anatomy in the Medical Department of the New York University, etc. With One Hundred and Thirty-four Half-tone Illustrations and Forty-two Diagrams. Philadelphia: W. B. Saunders, 1896. Pp. 11 to 680. [Price, $2.50.]

Quain's Elements of Anatomy. Appendix: Superficial and Surgical Anatomy. By Professor George D. Thane, of University College, London, and Professor R. J. Godlee, M. S. Illustrated by Twenty-nine Engravings. Tenth Edition. London, New York, and Bombay: Longmans, Green, & Co., 1896. Pp. 76.

Elementary Anatomy and Surgery for Nurses. A Series of Lectures delivered to the Nursing Staff of the West London Hospital. By W. McAdam Eccles, M. S. Lond., F. R. C. S. Eng., Assistant Surgeon to the West London Hospital, etc. London: The Scientific Press, Limited, 1896. Pp. xv–158. [Price, 2*s.* 6*d.*]

How to Feed Children. A Manual for Mothers, Nurses, and Physicians. By Louise E. Hogan. Philadelphia: J. B. Lippincott Company, 1896. Pp. 5 to 236. [Price, $1.]

Transactions of the Royal Academy of Medicine in Ireland. Volume XIII.

The Seventy-seventh Annual Report and Documents of the New York Institution for the Instruction of the Deaf and Dumb, to the Legislature of the State of New York. For the Year 1895.

The Annual Report on the Health and Sanitary Condition, etc., of the Borough of Hastings for the Year 1895.

The Insanity Law of the State of New York. A Compilation of Statutes relating to the Insane and to Institutions for their Care and Treatment; to which is appended the Official Orders and Regulations of the State Commission in Lunacy. By John F. Montignani, of Albany.

Aseptolin. A Formulated Treatment for Tuberculosis, Septicæmia, Malaria, and La Grippe, with Reports of Cases. By Cyrus Edson, M. D. The Equitable Chemical Co., 1896.

The Pathfinders. By James T. Jelks, M. D., Hot Springs, Arkansas. [Reprinted from the *Journal of the American Medical Association.*]

Conservative Surgery upon the Uterus and its Annexa through the Vaginal Route. By Hiram N. Vineberg, M. D. [Reprinted from the *American Medico-surgical Bulletin.*]

The Surgical Treatment of the Backward Displacements of the Uterus, with Special Reference to Vaginal Fixation. By Hiram N. Vineberg, M. D.

Neuritis complicating Dislocation of the Shoulder and Elbow. By M. A. Veeder, M. D., of Lyons, New York. [Reprinted from the *Transactions of the Medical Society of the State of New York.*]

New Inventions, etc.

A UTERINE AND RECTAL ENDOSCOPE.

By Samuel M. Brickner, M. D.

Through the medium of this preliminary statement, I desire to direct attention to an instrument of my device which has for its purpose the visual examination of the endometrium and the rectal mucous membranes. The apparatus, the outcome of many trials and experiments, has met, in a reasonably successful measure, the demands made upon it.

It consists of a steel tube, six inches and a half long, blackened on its internal surface. At it sdistal end the instrument has a beak the object of which is to keep the mucous membrane under inspection from soiling the prism which underlies it. This prism is covered with a semicircular, closely fitting piece of steel which can be withdrawn by a small lever after the introduction of the instrument. At its proximal end, the tube is fitted with a rod projecting from its lower surface which allows it to be connected with the handle, the source of light. The light of a ten-candle-power electric lamp is thrown, by means of a prism at the top of the handle, through the tube. The reflected image is then seen, inverted.

I regret that it is impossible at this time to publish an illustration of the instrument; but this difficulty will have been obviated within a few weeks, when I hope to present a more detailed account of the apparatus. It is in the trust that the uterine endoscope may facilitate diagnosis and further therapeutic interference that I present it to the profession. Its advantages are, I believe, many; its disadvantages, if such there are, must be overcome by time and labor.

The instrument has been made for me by Messrs. George Tiemann & Co., of New York.

Miscellany.

Symptomatic versus Anatomical Cure after Gynæcological Operations.—In the *New York Polyclinic* for May 15th there is an article on this subject by Dr. Henry C. Coe, who remarks that the tendency of modern gynæcology is strongly surgical. It is no exaggeration, he says, to state that both in their teaching and in their practice not a few specialists are inclined to view most pelvic troubles purely from an operative standpoint; indeed, those who lean rather to the side of conservatism are often influenced by the prevailing *ardor operandi*, as well as by the frequent inclination of patients to seek a short surgical cut to relief from their ailments, rather than the more circuitous route of long and tedious local treatment.

Since gynæcological operations for the cure of minor troubles are so much more frequent than they were a few years ago, and are performed by the general practitioner, as well as by the specialist, it seems pertinent, he thinks, to inquire whether the ultimate results are, on the whole, more satisfactory than they were in the days when the non-surgical treatment of the same affections was generally in vogue.

Dr. Coe excludes from consideration the major operative procedures undertaken for the purpose of saving life or removing diseased organs or neoplasms, by either abdominal or vaginal section. He makes particular reference to the operations for the cure of displacements, the repair of traumatic lesions, or the relief of congenital anomalies, as well as the so-called conservative surgery of the annexa. The question, he says, naturally suggests itself to one who looks beyond the operation *per se*, How far does it fulfill the indications in a given case, and to what extent does the symptomatic correspond with the anatomical cure?

The fact can not be too frequently or strongly emphasized, says the author, that every gynæcological case observed for the first time should be regarded as offering a separate problem for solution. Given a certain set of symptoms for the relief of which (rather than for the cure of any recognized lesion) the patient seeks the aid of the specialist, it is his difficult task to analyze these, to refer them to their true cause or causes, and finally to suggest the remedy. Manifestly, he says, his decision will depend largely upon the relative importance which he assigns to the associated pathological conditions—since there are usually more than one. In this regard he is apt to be biased by his early training, his peculiar views on pelvic pathology, by his former experience in similar cases, and above all by his favorite hobby, which few fail to ride until they meet with some bad falls. Hence the wide diversity of views among men equally skilled and equally honest, and hence the resulting confusion in the mind of the patient. In New York particularly, says Dr. Coe, it is no uncommon experience for a woman with the familiar combination of laceration of the cervix and of the pelvic floor, with retroversion and prolapse of the ovaries, to consult a number of specialists and to receive as many distinct opinions as to the proper treatment to be pursued in her case. One will advise tamponade, another the insertion of a pessary, a third will promise a positive cure by the ordinary plastic operations, a fourth would supplement these with Alexander's operation, a fifth would add ventrofixation, while a sixth attributes all the symptoms to the ovary and recommends its entire or partial removal by vaginal or abdominal section, as his preference may be. Each may be perfectly honest in his opinion, and it would be worth little if he were not prepared to stoutly maintain it. Yet, Dr. Coe continues, it is manifest even to the laity that all can not be right—that is, if there is any connection at all between obvious pathological conditions and symptoms—while the unpleasant fact often comes out that in a case like the one mentioned, even after the cervix and pelvic floor have been restored to an apparently perfect condition, the uterus kept in its normal position, and the prolapsed ovary elevated, the patient may return after the lapse of several months complaining that she has not experienced the promised relief. This is a discouraging experience for the beginner, who has derived his ideas of the value of gynæcological surgery from the writings of the enthusiastic originators of the operations. Men who do much work in outdoor clinics are apt to become somewhat pessimistic with regard to the value of such operations when they see patients return month after month for treatment who were discharged from the hospital as cured—a term which is now generally accepted in a surgical rather than in a symptomatic sense.

Granting, says Dr. Coe, that we have passed the elementary stage in surgery and assume that primary union is to be expected in every aseptic case, we are now more concerned about the ultimate than the immediate results of minor gynæcological operations. He gives a brief review of some of the reasons why the former do not always meet the expectations of the patient and surgeon which, he thinks, may not be without interest. One of the most obvious is the undue

importance assigned to minor pathological conditions of the pelvic organs occurring in patients whose symptoms are really due to organic or functional troubles elsewhere. Reflex neuroses are notoriously the excuse of the hasty operator, and the temptation to refer distant neuralgia, backache, hysteria, and all the puzzling phenomena with which we are so familiar in the neurotic women of the present day to a laceration of the cervix, a prolapsed ovary, or a slight anteflexion is so strong that it requires no little courage for a gynæcologist to give an opinion to the contrary.

It is not only, however, for the reasons stated, says Dr. Coe, that many minor gynæcological operations are disappointing in their ultimate results. The indications may have been clearly recognized and fully met, the operations anatomically perfect, yet the patient fails to experience the promised relief. The causes are not hard to find in most instances, especially in hospital practice, where patients are often discharged a few days after the rèmoval of the stitches, with no definite instructions as to rest and the avoidance of matrimonial relations, and with no cautions as to the necessity of after-treatment.

In private practice the situation is somewhat different, but even here, he thinks, we do not sufficiently emphasize the fact that weeks and months may elapse before the patient fully experiences the beneficial effects of the operations, during which time it may be necessary for her to wear a pessary, often an abdominal bandage, to continue her douches, and to remain under close observation. The patient may delude herself with the hope that the benefits of plastic operations will be experienced as soon as she leaves the sick-room, but the surgeon ought never to expect any such miraculous results. In brief, the operations may be only the initial rather than the final step in a course of local and general treatment. This, says Dr. Coe, is not an admission of the limited range of gynæcological surgery so much as it is an intelligent statement of the complex conditions with which we are often obliged to deal. A clear understanding of this fact will render us, if not more conservative in our treatment, at least more careful in our prognoses.

The following conclusions, says the author, may be drawn from the foregoing remarks: Not only are the pelvic pains for which the patient consults the gynæcologist complex, but their origin is often obscure. It is safe to infer that they are seldom referable to a single obvious pathological condition. Hence the operative treatment of this condition must be more or less empirical. Prolonged observation of the patient may be necessary before the true anatomical cause of the symptoms is determined. It may in many cases be wise to insist upon a course of local and general treatment, the correction of displacements, etc., before suggesting the advisability of an operation. The exact object aimed at in the operation should be clearly explained to the patient, and especially the true relations between the anatomical and the symptomatic cure. Above all, stress should be laid upon the fact that immediate benefit is the exception rather than the rule.

Dr. Coe thinks that it may not be amiss to warn the post-graduate student who during his stay of a few weeks in a large city witnesses a considerable number of operations that there is a distinct danger of his absorbing too much of the surgical spirit which is in the air. Not only are gynæcological operations performed earlier and more frequently in the case of hospital patients who can not submit to a long course of preliminary treatment, but such operations are often more heroic than would be attempted in private practice for the relief of the same conditions. Moreover, he says, the patients themselves readily submit to them on the advice of prominent surgeons, whose professional standing is such that it is not affected by individual failures; but in his own smaller community the practitioner must be aware that the conditions are widely different. There an operation, however small, is invested with considerable importance. Every one hears about it. The practitioner's own reputation is at stake, and he must consider the remote as well as the immediate consequences of the surgical procedure from which he has promised so much. He can not discharge his patient as cured at the end of three or four weeks and assume no responsibility with regard to her subsequent condition. She remains with him—a daily evidence of his failure or an active herald of his success.

It is for this reason, continues Dr. Coe, that it behooves every thoughtful man not to accept unhesitatingly the dicta of any teacher, however eminent, but to ask himself how far he can apply them in his own practice. If he is wise he will carefully consider all the conditions in every case before he urges an operation, and will above all keep clearly in mind the essential difference between the repair of lesions and the relief of certain symptoms which may or may not be dependent upon them. The over-enthusiastic surgeon who always promises a cure will in the long run gain the confidence of his community less surely than the one who seems to err on the side of timidity and ultra-conservatism, especially if the former's opinions are suspected of being somewhat too strongly influenced by financial considerations.

The Tonsillar Cough.—The *Presse médicale* for May 13th contains a report of a recent meeting of the Société française d'otologie, de laryngologie et de rhinologie, at which M. Furet read a paper on this subject. This cough, he said, which might result from any pathological alteration of the tonsils, was sufficiently explained by the very complex innervation of the gland. In fact, the glosso-pharnygeal, the lingual, the spinal, and the pneumogastric nerves were blended and became entangled at its outer surface, where they formed a small plexus which Andersch had described under the name of the tonsillar plexus. It must not be forgotten, said M. Furet, that the tonsils were inclosed by the muscles of the pillars of the fauces, which were very distinctly connected with the muscular apparatus of the larynx.

This cough, said the author, was violent, spasmodic, and even extremely painful; it was frequently accompanied by reflexes in the neighboring region, and particularly by watering of the eyes. It was distinguished from the cough due to affections of the respiratory tract by the complete absence of expectoration, and, owing to this fact, it did not yield to any of the remedies generally used.

M. Furet thought that the preferable methods of treatment were amygdalotomy in children and *morcellement* in adults.

The Western Medical Review.—This is the title of a new monthly journal published in Lincoln, Nebraska. The first number, for May, is exceedingly creditable. The editor is Dr. George H. Simmons.

The American Orthopædic Association.—At the recent annual meeting officers were elected as follows: Dr. Samuel Ketch, of New York, president; Dr. H. M. Sherman, of San Francisco, and Dr. W. R. Townsend, of New York, vice-presidents; and Dr. John Ridlon, of Chicago, secretary.

In our last week's paragraph about the recent annual meeting of the association we erroneously gave the president's name as Dr. Samuel Ketel. It should have been Dr. Samuel Ketch.

Vivisection in the District of Columbia.—The following are the resolutions passed by the Medical Society of the State of Pennsylvania to which we briefly alluded last week:

Whereas, Senate bill No. 1,552, entitled "A bill for the further prevention of cruelty to animals in the District of Columbia," is pending in the Congress of the United States; and

Whereas, We, the Medical Society of the State of Pennsylvania, are fully convinced that this restrictive legislation, should it become a law, would seriously cripple the efforts of the earnest scientific investigators of the District of Columbia (and indirectly of the United States) and would retard the progress of medical science in its beneficent efforts to alleviate suffering and diminish the ravages of disease; and

Whereas, Cruelty to animals is not practised in the District of Columbia by those scientists who unselfishly and with great personal risk strive to increase our knowledge of disease and of the methods of its prevention and cure; therefore, be it

Resolved, That the Medical Society of the State of Pennsylvania hereby urge the Pennsylvania delegation in the Congress of the United States to use all honorable means to defeat the said bill or any similar restrictive measure.

Resolved, That copies of these resolutions, attested by the secretary of the Medical Society of the State of Pennsylvania, and signed by the president, be sent to each member of the Pennsylvania delegation in Congress and to the chairmen of the committees on the District of Columbia, of the Senate of the United States and of the House of Representatives.

Dr. Charles W. Dabney, Jr., acting secretary of the United States Department of Agriculture, has made this absurd bill the subject of a very cogent letter to the chairman of the Senate committee on the District of Columbia. The concluding portion of Dr. Dabney's letter is as follows:

"The investigations which the Bureau of Animal Industry has made have been so successful as to attract the attention of the scientific world, and they have required constant experimentation upon animals. Some of these experiments have been painful to the animals operated upon, but they have been in charge of scientific and humane persons who have exerted themselves to prevent any unnecessary suffering. Such experiments, which are intended to supply the knowledge required for protecting our domestic animals from disease and for securing a food supply from them uncontaminated by disease, and which also contribute to the prevention and cure of human maladies, are less subject to the charge of cruelty, even though they cause pain, than are the ordinary practices of dishorning, emasculation, branding, and slaughtering, all of which are countenanced for economic reasons and cause more pain than do scientific experiments. So long as we admit that an animal may be caused to suffer the intense pain of castration in order that it may be more economically raised and better suited for the service of man or for the production of edible meat, so long as we permit millions of delicate calves to be burned with a red-hot iron upon their sensitive skins in order that they may be identified, and so long as we admit that animals may be killed by painful processes to supply us with food, it is inconsistent to say that they can not be used in experiments necessary for the advancement of knowledge, the relief of suffering, and the saving of property and life.

"The first investigations of this kind which this department was directed by Congress to make related to the diseases of swine, and these investigations have been continued until those diseases which cause the principal losses are well understood and can be controlled by the application of proper measures.

"The Bureau of Animal Industry was established principally to avert the great danger which threatened our cattle industry from the existence on our territory of that cattle plague known as the contagious pleuro-pneumonia of bovine animals. Other countries had struggled with it in vain, but it had never up to that time been eradicated from any country in which it had gained a considerable distribution. The nature of the disease and the best methods of controlling it were imperfectly understood. The experiments made here upon animals gave sufficient information, however, to enable those charged with the work to mark out a systematic and scientific plan of operations which led to the complete eradication of the disease in less than five years. Although four years have passed since this work was completed, the predictions of the scientists have been fulfilled to the letter, and no cases of the disease have been found during that time. Previous to this work being undertaken the disease had existed constantly and extensively for more than forty years, and many persons had become so accustomed to it that they freely predicted its immediate reappearance even if it was stamped out.

"An illustration of the absolute necessity of experiments upon animals to settle contested questions relating to disease may be drawn from the existing restrictions of the British Government on the American cattle trade. Although there has been no pleuro-pneumonia in this country for over four years, the British inspectors frequently condemn our cattle as being affected with that disease. The American inspectors and many European veterinarians hold that the disease actually discovered is ordinary pneumonia arising from exposure during the ocean voyage. How then can this difference of opinion between the British and American officers be settled? Not by clinical observation, not by discussion, not by diplomacy, for all of these have been tried. A scientific and incontestable demonstration could be made by exposing healthy cattle to those said to be affected with contagious pleuro-pneumonia. This would be a final and unanswerable test, but no such test can be secured. They have limited experimentation upon animals in Great Britain by law. Objections have been raised to such an experiment, and this question can not be brought to a final issue. If the bill under discussion should unfortunately become a law, an experiment could not be made at the seat of the United States Government to settle this important question, even should it become possible for other reasons to make the experiment here. The experiment would be calculated to give pain, it would not be an inoculation experiment or a surgical procedure, and, consequently, it would be necessary, according to this bill, to keep the animals in the experiment, say twenty head of cattle, completely under the influence of ether or chloroform for the three or four weeks during which the animals might feel more or less pain. Such a requirement is absurd and impossible of fulfillment.

"This is not an unusual or overdrawn case. It is only an illustration of contested or unsolved questions frequently coming before this department for solution, and which it is of the greatest importance to the agricultural industry to have settled reliably and permanently.

"Another great work which the bureau has done by experimenting upon animals is the elucidation of the nature, the mode of dissemination, and the means of preventing the disease known as Texas fever of cattle. This disease was causing enormous losses to farmers by death of their stock, was demoralizing the cattle industry of a number of Western States and Territories, and was causing such fatality among cattle *en route* to foreign countries that the propriety of ad-

mitting our animals was questioned, and insurance during the summer months was advanced to ten per cent. of the value of the animals. Now all of this has been changed. Outbreaks of Texas fever in this country are rare and unimportant, and the insurance on export cattle has been reduced to one per cent. or less.

"These are only a small part of the results accomplished by the Bureau of Animal Industry through this kind of experimentation. Such researches are difficult, and they are only successfully conducted where the conditions are favorable and where the investigators are stimulated by friendly encouragement and support. It may be safely said that under hostile legislation, classifying such experiments as a form of cruelty, surrounding them with numerous limitations and restrictions, subjecting the experimenter to the espionage of intolerant inspectors and, threatening him with excessive penalties for infractions of any of the many requirements, the success which we now point to with pride would not have been achieved.

"There are still many problems relating to animal diseases which must be investigated and solved by this class of experiments before the animal industry can yield to our farmers an adequate return. Agriculture demands and should receive all the assistance which can be given to it by the most advanced scientific methods employed under the most favorable conditions. We find to-day many of the dairy herds affected to the extent of seventy to ninety per cent. with tuberculosis; we find the swine fed upon the refuse milk of such dairies affected with the same disease; and we have every reason to believe that much of the tuberculosis in people comes from the same source. Is the Bureau of Animal Industry to be interrupted and hampered in its study of this and other diseases by legislation alleged to be for the prevention of cruelty to animals when the promoters of this legislation have failed to show that any improper experimentation has been conducted or is likely to be conducted in the District of Columbia?

"Are the vital interests of agriculture in the whole United States to be made subservient to the demands of an overzealous and intolerant local society, which appears incapable of taking a broad and liberal view of this subject? Are we prepared, in order to protect a few dogs, cats, and other animals from sufferings less than these animals usually undergo when they die a so-called natural death, to have legislation enacted which would withdraw the efforts of the scientists who are working for the relief of the hundreds of thousands of men, women, and children who now die annually in this country from preventable diseases? Are the millions of animals which suffer and die from animal plagues every year less worthy of attention than the few which die with less pain in the research laboratory? These questions appear not to have occurred to those who are advocating this legislation. The effort to limit, obstruct, and prohibit such experiments, although it originates from humane societies, is not in the cause of true humanity. It ignores the interests and sufferings of mankind and would perpetuate these sufferings to carry into effect what is clearly an erroneous view of what constitutes kindness and humanity to the lower animals.

"If the legislation already enacted for the prevention of cruelty to animals in the District of Columbia is shown to be insufficient for this purpose, and additional legislation is thought desirable, this legislation should be so framed as not to affect the executive departments of the United States Government, and under no circumstances should local legislation be allowed to interfere with, demoralize, or prohibit the important scientific investigations which are specifically authorized by Congress for the benefit of the great agricultural industry of the whole country.

"Agriculture at this time needs the encouragement and assistance which the experimental work of the Bureau of Animal Industry is bringing to it. Much has already been accomplished, but even greater results are promised in the near future. It is an age of science and progress, and all other industries are rapidly advancing through scientific research. Should not our farmers receive all possible aid from the same source?"

Protonuclein in the Treatment of Anæmia.—In the March number of the *Canadian Medical Review* Dr. John Ferguson, of Toronto, relates the case of a gentleman, aged fifty-four years, who had resided in India for several years. His health had not been good for about two years. During this period he had suffered loss of flesh, strength, and appetite. In April, 1895, the symptoms became more distressing, and it was necessary for him to give up his work as a tutor and rest. He became a patient of Dr. Ferguson's about the end of September, 1895. At this date he was a pronounced victim to insomnia. His digestion was extremely bad; he had much pain and frequent nausea after taking nourishment, either liquid or solid. There was an excessive amount of flatulence. The bowels were very torpid. The pulse was weak, and usually as frequent as 100 a minute. There was always some elevation of temperature, sometimes as high as 102°. Continuous headache was another feature of the case.

The lips and conjunctivæ were almost colorless, and the tongue was exceedingly pale. The skin had a pale lemon tint. The red blood-corpuscles were only 1,200,000 to the cubic millimetre. The urine was normal. No organic disease could be discovered anywhere in the system. In spite of all efforts at treatment and feeding he gradually grew worse.

Dr. J. E. Graham saw the patient in consultation. No other disease could be discovered than progressive anæmia. It was agreed to place him in some hospital for a time. He was admitted into the Toronto Western Hospital on January 7, 1896. Dr. Ferguson went with him in the coupé, and says he really feared he would collapse on the way. When he arrived at the hospital he was in such a state of exhaustion as to be unable to walk upstairs. On being taken into his room he became unconscious, and in this condition he was hurriedly undressed and put to bed with hot bags around him. In the course of an hour or so he gradually regained consciousness.

At this stage of his disease there were varying elevation and a subnormal condition of the temperature. He had intense headache and almost continuous insomnia. The bowels were constipated, and nearly everything in the way of nourishment was vomited. The patient was in a state of extreme emaciation and asthenia. There were frequently low delirium and confusion of thought. He often regarded himself as a duality.

On his admission the bowels were washed out daily with a large enema containing some boric acid. Daily he was given a sponge bath. The stomach was washed out every day except occasionally when he felt too weak. He was fed on peptonized milk, egg albumen, and beef juice. The headache continued, however, in a most intense degree, and there was no improvement in the insomnia. For the headache, acetanilide, phenacetine, salol, and other agents were employed, but with only the most temporary relief. Opium, chloral, paraldehyde, and sulphonal were administered from time to time for the insomnia. On one occasion thirty grains of sul-

phonal were given, with the result of causing only a few hours' imperfect sleep, followed the day after by much vomiting, great restlessness, extreme headache, and a feeble pulse.

He had been in the hospital a little over two weeks, and all the appearances pointed to an unfavorable termination of the case. He was now placed on the use of protonuclein (tablets), as prepared by Reed & Carnrick. The enemata, lavage of the stomach, and the same nourishment were continued. Tablets were given every three hours. By the third day it became apparent that the patient was improving. The headache was the first symptom to become modified. In a week it had almost wholly disappeared, and at the date of the report was entirely gone.

The sleep soon became better. By the end of the first week of the use of protonuclein, he would sleep three and four hours at a time. At the time of the report he could sleep from six to eight hours, and woke with a rested and refreshed feeling. The appetite was good; he could take eggs, meat, toast, porridge, oysters, beef juice, bread and butter, milk, and light puddings without the slightest discomfort. There was no nausea or vomiting; the bowels were quite regular, and no enemata or aperients had been administered for at least ten days. The temperature was constantly normal. The patient was gaining in flesh and could walk about the ward and in the hall for an hour and experience no ill effects. The lips and nails had a good color, and the tongue had lost its pallor. The abdominal walls, which had been extremely retracted, were now filling with adipose tissue.

The most marked change, however, was to be found in the red blood-globules. When the protonuclein was first ordered, there had been not quite 1,000,000 to the cubic millimetre. Now there were 3,500,000.

The progress of the patient had been one of daily improvement. He would leave the hospital in two or three days, when the same line of treatment would be maintained, with the addition of a mild course of massage to assist in the development of the muscles.

It ought to be mentioned, says Dr. Ferguson, that the preparations of arsenic and iron had been fairly tried in this case, and could not be tolerated in any form. During the three days preceding the date of the report, however, arsenic had been tentatively given, and so far had caused no disturbance, indicating an improved state of assimilation.

When the patient had been out of the hospital for a short time, the improvement still continued. The sleep and digestion were good, and the muscles were gaining rapidly in tone and size.

Vacancies in the Medical Corps of the Army.—There are at present three vacancies in the medical corps of the United States army, and it is expected that at least three more will occur during the present year. As usual, an army medical board will meet in Washington early in October for the examination of candidates. The requirements for admission to the medical corps are stated in a circular issued by the surgeon general of the army, dated May 21, 1896, and approved by the secretary of war, as follows:

Permission to appear before the board is obtained by letter to the secretary of war, which must be in the handwriting of the applicant, giving the date and place of his birth and the place and State of which he is a permanent resident, and inclosing certificates, based on personal acquaintance, from at least two reputable persons as to his citizenship, character, and habits. The candidate must be a citizen of the United States, between twenty-two and twenty-nine years old, of sound health and good character, and a graduate of some regular medical college, in evidence of which his diploma will be submitted to the board. The scope of the examination will include the morals, habits, and physical and mental qualifications of the candidate, and his general aptitude for service; and the board will report unfavorably should it have a reasonable doubt of his efficiency in any of these particulars.

The physical examination comes first in order, and must be thorough. Candidates who fall below sixty-four inches in height will be rejected. Each candidate will also be required to certify that he labors under no mental or physical infirmity or disability which can interfere with the efficient discharge of any duty which may be required. Errors of refraction, when not excessive, and not accompanied by ocular disease, and when correctible by appropriate glasses, are not causes for rejection.

The mental examinations are conducted by both written and oral questions upon—

1. The elementary branches of a common-school education, including arithmetic, the history and geography of the United States, physics, ancient and modern history, and general literature. Candidates professing special knowledge of the higher mathematics, ancient or modern languages, drawing, analytical chemistry, or branches of natural science will be examined in those subjects as accomplishments, and will receive due credit therefor according to their proficiency.

2. Professional branches, including anatomy, physiology, chemistry, hygiene, pathology and bacteriology, therapeutics and materia medica, surgery, practice of medicine, obstetrics, and the diseases of women and children.

Examinations will also be conducted in clinical medicine and surgery at the bedside, and operations and demonstrations will be made by the candidates upon the cadaver.

Hospital training and practical experience in the practice of medicine, surgery, and obstetrics are essential to candidates seeking admission to the medical corps of the army, who will be expected to present evidence that they have had at least one year's hospital experience or the equivalent of this in practice.

To save unnecessary expense to candidates, those who desire it may have a preliminary physical examination and a mental examination in the elementary branches of a common school education, by a medical officer of the army stationed most conveniently for this purpose, who will act under instructions from the medical examining board.

Tetanus following Repeated Injections of Morphine.—The May number of the *Medical Chronicle* contains the following account, by Dr. D. J. Leech, of two cases of tetanus which came under his observation: The first case was that of a man, thirty-five years old. Two days before the author saw him he complained of pains in the muscles of the neck. Tetanic paroxysms very soon set in, and on the afternoon of the third day they occurred at frequent intervals, and were quite characteristic. He died a few hours afterward.

He had not suffered from any injury, but he had contracted the habit of injecting himself frequently with large quantities of morphine, and after death, marks left by the injection of morphine were found all over the anterior surface of the body. The thighs especially were closely covered with nodules, some of which were dark at the top. The lower part of the abdomen was less closely covered by them. There were no ulcerations, but here and there some cicatricial tis-

sue. Several dirty syringes for the injection of morphine were found, and one or two bottles containing turbid morphine solution. The patient had been in the habit of injecting into himself considerable quantities of morphine, and there was reason to believe, says the author, that he had paid but little attention either to the cleanliness of the syringe or the clearness of the solution he used.

The second patient was under the care of Dr. Elliott, of Rochdale, who had given him morphine occasionally for four years, but, finding that the man had begun to purchase morphine for subcutaneous use by himself, had refused to give him any more, and nothing was heard of the patient again until February in this year, when Dr. Elliott's partner, Dr. Brooks, was sent for, and found the man suffering from violent tetanic paroxysms, from which he died in a few hours. The illness dated only from the previous evening.

He had not suffered from a wound or injury of any kind, but the body, arms, and legs were found covered with marks due to the hypodermic injection of morphine. No ulceration could be found, but in many places there was cicatricial tissue.

Several somewhat similar cases, says Dr. Leech, have been placed on record. In the *British Medical Journal* for November, 1879, there is an account of the death of a woman from tetanus, who had long administered to herself subcutaneously large quantities of morphine. The front part of the body was covered with innumerable scars from the punctures caused by the hypodermic needles.

Osborne (*British Medical Journal*, July, 1892) records the death of a man, aged twenty-four years, from tetanus which was evidently connected with a suppurating sore near the right shoulder, following the hypodermic use of morphine. This man, too, had been in the habit of injecting himself with morphine.

A series of cases, says Dr. Leech, have also been recorded of tetanus occurring after the subcutaneous injection of quinine, and Dr. Anderson, in the *British Medical Journal* for 1892, states that tetanus is by no means uncommon after the use of the hypodermic needle.

It is worthy of note, says Dr. Leech, that in most of the cases in which tetanus has occurred after the injection of morphine the injections were self-administered. Habituation to the use of the drug, he says, seems to engender carelessness as to the condition of the syringe and the solution employed.

The Influence of Intercurrent Diseases on the Mental Condition of the Insane.—In the May number of the *Archives de neurologie* M. René Charon remarks that the salutary influence of serious intercurrent diseases upon the mental condition of the insane has been recognized for a long time, and if it can be no longer affirmed, he says, that a mental affection can not be really cured, yet physicians frequently observe a more or less considerable amelioration of the psychical troubles during the course of inflammatory manifestations of microbian origin.

M. Charon has collected notes for four years relative to the diseases incident to a population averaging about 1,250 insane persons, and they indicate favorable modifications of the mental condition during the course of the following diseases: Erysipelas of the face, pneumonia, pulmonary tuberculosis, anthrax, phlegmon, typhoid fever, small-pox, and adenitis with suppuration. Out of 153 patients who suffered from these diseases, 98 had acute or chronic mania or dementia; of this number, 61 showed an amelioration of the mental condition. This amelioration, says the author, occurred in sixty-two per cent. of the insane, but in the majority of cases it was slight and of short duration.

M. Charon gives an account of two patients who were attacked with serious typhoid fever and adenitis with profuse suppuration. One patient presented the appearance of maniacal dementia and was in fact a chronic maniac; the other had an attack of acute mania of several weeks' duration. In the first case a very grave inflammatory lesion involving the cervico-facial regions occurred, with profuse suppuration which persisted for a long time. During this sickness all mental troubles disappeared suddenly, and for three weeks there was an apparent cure. At the end of this time, however, the former mental condition returned rather suddenly. In the second case typhoid fever in a grave adynamic form set in, and during the period of the disease the maniacal symptoms disappeared suddenly and completely. This condition lasted for a month, when the symptoms returned, to be followed, however, by a progressive amelioration.

The influence of microbian diseases, continues the author, among the insane leads, in the majority of cases, when the subjects are young, to a more or less considerable amelioration of the mental condition. This may go on until the complete disappearance of the maniacal symptoms, whether it is acute or chronic mania. But the sudden return to the normal condition, followed almost as suddenly by a relapse, can not be considered as a veritable cure, but only as an apparent recovery, an eclipse of the former psychopathic condition.

Vinegar as an Antidote to Carbolic Acid.—The May number of the *Canadian Practitioner* contains an abstract of an article from the *Semaine médicale* in which the writer states that, according to Professor Carleton, vinegar is an antidote to carbolic acid. When it is applied to the skin or to a mucous membrane which has been burned by the acid, it causes a rapid disappearance of the characteristic whiteness, as well as of the anæsthesia produced by carbolic acid, and it also prevents the formation of a slough. Moreover, it neutralizes any of the acid that may have been introduced into the stomach. The first thing, therefore, to do, he says, in cases where carbolic acid has been swallowed is to make the patient drink some vinegar mixed with equal parts of water, and then to wash out the stomach.

The Methodist Episcopal Hospital in Brooklyn.—Dr. Lewis S. Pilcher informs us that he and Dr. Warbasse are not entitled to the full credit we erroneously gave them for the report of the first surgical division, in our issue for May 23d, but that it should be shared by Dr. George R. Fowler and Dr. J. Bion Bogart. We take pleasure in making the correction of an error due only to inadvertence, as Dr. Fowler and Dr. Bogart will readily perceive.

The Buffalo Academy of Medicine.—At the last monthly meeting of the Section in Medicine, on Tuesday, the 2d inst., the question Have Medical Men a Moral Right to Patent Instruments? was discussed by Dr. George E. Fell (in the affirmative) and Dr. Herman E. Hayd (in the negative).

The Nebraska State Medical Society.—At the annual meeting, which was held in Lincoln on May 19th, 20th, and 21st, Dr. F. D. Haldeman was elected president, and Dr. George H. Simmons, secretary.

The State Agricultural College of South Dakota.—We learn from the *Industrial Collegian*, of Brookings, that a former esteemed contributor of ours, Mr. Dice McLaren, M. S. B. D., professor of zoology, physiology, and entomology, is the acting president of the faculty.

Original Communications.

THE SANATORIUM OR CLOSED TREATMENT OF PHTHISIS.*

BY EDWARD O. OTIS, M. D.,
BOSTON.

THE open and the closed or sanatorium treatment of phthisis may not inaptly be compared, I think, to the treatment of a private patient before and after the advent of the trained nurse. With the accurate, intelligent, and skillful ministrations of the nurse, the prognosis for the patient is appreciably improved, other things being equal. In like manner, with the resources and expert service of a sanatorium the percentage of recoveries has been found to be considerably greater than under the most favorable conditions in the open resorts. Besides this chief advantage of better results in the closed treatment there are others which are not inconsiderable, and to them I shall refer directly. All of us who see and treat many cases of phthisis, either in the large centres of population or at the various health resorts, must, it seems to me, have become profoundly impressed, not to say depressed, by the fact that the results obtained by the open treatment, so called, even under the most favorable environment, are greatly inferior to those produced by the closed treatment, as illustrated by the best sanatoriums abroad and the few existing in this country. Of one thousand and twenty-two cases treated by Dettweiler, at Falkenstein, from 1876 to 1886, there were 24·2 per cent. of complete and relative cures—and by relative cure is meant an appearance of good health, with good action of all the organs, especially the heart and lungs, but where there are some physical signs still remaining in the lungs.

Meissen, in his sanatorium at Hohenhonnef, gives twenty-seven per cent. of cures. In Dr. Trudeau's last report of the Adirondack Cottage Sanatorium, of ninety-one patients who remained from three to forty-four months, nineteen incipient and advanced cases were apparently cured, and twenty-six incipient and advanced cases arrested; in reports of other years he exhibits equally good results. Rompler, at Görbersdorf, gives twenty-five to twenty-seven per cent. of cures. Von Ruck, at Asheville, reports thirty-five per cent. cured or permanently arrested; forty-six per cent. improved. Turban, at Davos, reports forty per cent. Knopf gives statistics from fifteen sanatoriums, either visited or communicated with by him, representing forty-five hundred patients; six hundred and thirty, or fourteen per cent., were absolute cures; six hundred and thirty, or fourteen per cent., relative; and eighteen hundred and ninety, or forty-two per cent., improved. The more intimate our knowledge of the disease and the multiplicity of its pathological conditions, and of the character of the average phthisical individual himself, the more hopeless seems the task of properly treating him, under however favorable a climate, without absolute control both of his body and of his mind. "It is upon a multitude of small details most frequently that the cure depends. In appearance they may seem trifling, but in reality they are of capital importance." The treatment, in a large measure, must consist in causing the patient to give up his bad hygienic habits and replacing them by good ones. The phthisical patient is a sick entity, sick in body and mind. He distorts the true relations of things, and when left to himself frequently acts disastrously from this distorted point of view. His moral and mental condition requires a vast deal of study and observation, which is only possible when he is immediately and constantly under his physician's eye. You, who practise in health resorts, I think, will corroborate these statements, and could doubtless adduce many cases in your own experience as illustrative of them. "A consumptive," says Léon-Petit, "given up to the care of those about him will be at the mercy of anything that may happen. In spite of the frequent visits of his physician, he will have to contend with his own peculiar weakness; he will commit with the best of intentions the gravest faults. His establishment may be perfect and the climate irreproachable, but he lacks the principal factor of treatment, without which all the others are rendered powerless—namely, the guide which he feels watches him constantly, in whom he has confidence, and who knows how to remove from his path the obstacles which can cause him to stumble." It is emphatically the case, as Dettweiler says, that the individual *in toto* has to be treated, and the moral education is quite as important as the bodily treatment. A consumptive is in a peculiar mental condition as a rule, possibly not different from that which is the concomitant of any chronic depressing disease, but which renders constant supervision and inspiration necessary. He lacks perseverance and power to concentrate the mind and will upon a definite object. In brief, as some one has said, a typical case of phthisis embraces little less than the whole field of pathology.

Moreover, with our present knowledge of the contagiousness of the disease, we must all agree, I am sure, that the sanatoria or special hospitals are the best means of protecting the non-tuberculous. We must reckon with the fact that the people are becoming educated to this new truth, and it will become more and more difficult to properly care for our consumptive patients, either at home or in the health resorts, where both non-tuberculous and tuberculous patients have been in the habit of congregating, as at Aiken, at Asheville, in southern California, and in various other stations south and west. Those who, simply for a change, or for other maladies than phthisis, resort to these various stations will, as well as the inhabitants themselves of these places, demand that they be protected from the danger of contagion, which is ever present when tuberculous patients are allowed to go free among them. Already hotel proprietors are recognizing this fact and closing their doors to the consumptive. Besides, then, all the other advantages of sanatorium treatment, there will be this other impelling motive of necessity to provide establishments in the health resorts of

* Read before the American Climatological Association, at Lakewood, N. J., May 13, 1896.

known reputation for the unfortunate consumptive. The physicians themselves in these resorts, I am sure, realize this necessity, as well as the unsatisfactory condition under which they are now compelled to treat their patients by the open method, and it is to them especially that we of the cities and portions of the country where phthisis so largely prevails must look to inaugurate the era of sanatoriums. We, on our part, must convince our patients of the much greater chances of recovery they have in a well-equipped and conducted sanatorium, and disabuse them of the erroneous ideas they may hold of the life in such institutions.

Whereas climate is a most valuable factor in the treatment of phthisis, as we would all confess, yet I believe that, both by the profession and the laity, its influence has been, if not entirely overrated, at least quite misunderstood. We have been trying to make it do the whole work rather than its own appropriate part. We have looked upon it too much as a specific. A study of the sanatoria abroad makes it evident, I think, that it is not a peculiar variety or even excellence of climate which has produced the favorable results, but rather the admirable *régime* of the sanatorium itself, and the exact precision with which the whole life of the invalid is governed. It is the perfect hygienic environment. All sources of help, climate among them, are made use of, each according to its value. Knopf says, and I think he is right, that if he had the choice of sending a patient who had some prospect of recovery to an ideal climate and altitude in an open station where he would be left free to act as he pleased, or to send him to a closed institution where all the conditions of climate were those of the lowlands, he would send him to the latter, convinced that his chance of cure in a relatively unfavorable climate, with the *régime*, hygiene, and constant supervision of the physician, was greater than in an ideal climate without these advantages which a sanatorium offers. Our medical journals are constantly publishing communications upon the various so-called climatic resorts which, in my opinion, still further promote this misconception of climate —namely, exaggerating its power and influence, and ignoring the vastly greater value of the hygienic treatment in its largest and fullest sense. It seems to me that it is time to make an emphatic protest against this one-sided view of the influence of climate *per se*, and an equally vigorous plea for the advantages of the hygienic treatment of phthisis as represented by the best sanatoriums. I do not wish to be understood as in any sense depreciating the value of climate, inestimable as it is. It is only that I believe in it so firmly that I desire to see it properly used and not abused through a misconception of its value. The consensus of opinion of all the experts in the treatment of this disease is that hygiene and dietetics come first, and after that climate, altitude, and medication.

There are certain facts and misconceptions regarding sanatoriums which it seems to me well to consider a little more closely. In the first place, there is a fear abroad that sanatoriums may be a source of contagion not only to the inhabitants of the localities where they are situated, but to the inmates as well. As to the fear that sanatoriums tend to spread the disease, we have the evidence to the contrary from both Görbersdorf and Falkenstein, two of the oldest and largest sanatoriums in Germany. Görbersdorf has been visited by twenty-five thousand patients during forty years, and the mortality from phthisis among the inhabitants has never passed the ordinary average, but, on the contrary, has diminished.* During the period of twenty years preceding the establishment of the Falkenstein Sanatorium an average of four per cent. of the inhabitants died annually of consumption, and 18·9 per cent. of the total mortality was attributed to that disease. After the institution was opened, during the period from 1877 to 1894, the average annual mortality from phthisis fell to 2·4 per cent., and the proportion of deaths from consumption to those from all causes sank to 11·9 per cent.† On the contrary, there is reason to believe that in the open resorts consumption has increased among the inhabitants since the advent of phthisical patients. This has been observed at Nice, Cannes, Monte Carlo, Mentone, southern California, and, I doubt not, other open resorts. Says the mayor of Nice, in a letter to Dr. Knopf: "It is of public notoriety that at Nice, and especially Mentone, tuberculosis has increased enormously since consumptives have frequented this station." Knowing, as we do now, the contagiousness of the disease and the carelessness of the average consumptive, how could this be otherwise, for among large numbers of consumptives allowed to go free there will inevitably be some who will scatter their sputum about, and then the danger begins. As to the danger of contagion in the sanatorium itself, we have the experience of Görbersdorf, Saranac, Brompton, and others. At the latter hospital, Williams says that during a long service he has observed only three or four cases of contagion among the *personnel* of the hospital. In the three great closed establishments at Görbersdorf, among the attendants, who are taken almost exclusively from the indigenous population—that is, from an outdoor to an indoor life—the mortality is very low in spite of very exhausting work. In an examination of the dust at the City of London Hospital for Diseases of the Chest and the Adirondack Cottage Sanitarium, by Heron and Hance, it was found to be practically free from bacilli. The first and last and constant care in a sanatorium is the proper disposal of the sputum; patients and attendants are taught to realize its danger and the way to protect themselves and others from it; this accomplished, contagion vanishes.

Another common objection to sanatoriums is the depressing effect upon one shut up with so many consumptives. If you suggest sanatorium to your patient or his friends it is not unlikely that they will consider the proposition as an impertinence on your part, and shudder at the mention of such an institution as a sort of Inferno, with "Abandon hope, all ye who enter here," written over it. This attitude of mind comes from the erroneous conception of a sanatorium, and ignorance of the life within it, together with the desire, perhaps natural enough to average human nature, to conceal from themselves or friends the fact that they have a desperate disease which demands a long and

* Rompler. *Beiträge zur Lehre von der chronischen Lungenschwindsucht.*

† Quoted in the *New York Medical Journal*, February 22, 1896.

unremitting struggle, aided by the best resources known, to combat it. Those of us who have visited sanatoriums in this country or abroad will agree, I think, that the atmosphere in these institutions is a cheerful one, the patients are generally happy and contented, and the "hope that springs eternal in the human breast" is fanned into a bright and constant flame. One encourages another and is encouraged by seeing others recover, and, if the director or physician is the man for the place and possesses something of the personality which makes the success of the faith-cure doctor, he is a constant inspiration to all. The repose of mind engendered in a sanatorium is most helpful. The patient is made to feel that he is wasting no opportunity, and, what is of inestimable value to a sick man, he is encouraged to give himself up entirely to the guidance of the physician and renounce all responsibility of his case. He is only to follow out from day to day the routine of life which is arranged for him, to do blindly, so to speak, what is told him to do, like school children or athletes training for a contest, a most favorable condition of mind for improvement and recovery. Petit gives the impressions of one of his own countrymen in a German sanatorium. At first it is a sad one, he says, but this is very fleeting, and is replaced by one which is quite the opposite—a deep serenity of mind begotten by the hope of cure. Thanks to this serenity, the invalids joke and laugh the entire day. "It is hope," adds Petit, "which enters the sanatorium, and it is hope which lodges there."

The educative value of a sanatorium is an important part of its influence. It is no small advantage to train the patient in proper methods of personal hygiene, so that when he enters the common life again he may be able to so care for himself as to avoid the dangers he once fell into by his faulty hygiene. And further, he will also be a teacher to others by precept and example, and show them how to avoid the conditions conducive to phthisis. Upon the consumptive at large and his entourage he will impress the danger of carelessness in disposing of the sputum. We should regard, I think, sanatoriums as most valuable allies to the conservators of public health in disseminating the knowledge of the danger of the sputum and the means of protection from it, and it is well for us to acknowledge our indebtedness to them.

The educative value of the sanatorium upon the side of its material for clinical study and its laboratory for the investigation of problems in tuberculosis is highly important. Consider the work of Brehmer and Williams, Dettweiler and Powell, Sabourin and Petit. In our own country we must all acknowledge our obligations to Dr. Trudeau for the work he has already accomplished in the Saranac Laboratory, and we have the new laboratory at the Winyah Sanatorium from which to expect valuable results. If special training is necessary for the physician who would direct a sanatorium or devote himself to the treatment of phthisis at large, the sanatorium is the natural school for such training. Dettweiler was a pupil of Brehmer's and Meissen of Dettweiler's. Moreover, many therapeutic problems, the testing of the value or worthlessness of any vaunted drug or method of treatment, can find in such an institution most favorable conditions for their solution. The advantages to the patient in the way of costly equipment the large plant of a sanatorium offers can not be so completely obtained in any other way, I believe; the sanitary arrangements, cleanliness, ventilation, preparation of food, heating, facilities for various kinds of baths and massage, means of physical culture and breathing exercises, location so as to command the greatest amount of sunshine—all these and others, when dominated by an expert, produce a combination of favoring circumstances rarely if ever possible in an open resort.

There are many details regarding the establishment of sanatoriums which it would be of interest to consider, had one time: the location, climate, altitude, capacity, method of housing, either in a number of small buildings, as at Saranac, or in one or two large ones, as at Görbersdorf and Falkenstein; my thesis, however, is a plea for the greater advantages and better results of the closed treatment rather than a discussion and review of sanatorium location, construction, and management.

I will, however, say a word or two regarding the question of climate in relation to the location of the sanatorium. With reasonable regard for other considerations, such as accessibility, facility for obtaining supplies, a near source of good and abundant water, etc., the next consideration should be given to climate, and that resort should be selected which offers the most favorable climatic conditions for the open-air treatment: a pure atmosphere, a majority of pleasant and sunny days, dryness of soil and air, and more or less equability of temperature. The medium and high altitudes have given the best results, and, other things being equal, are to be given the preference in the location of the sanatorium. All of those in Europe, with the exception of the three at Davos, Leysin, and Arosa, in Switzerland, are of the medium altitude class—averaging about sixteen hundred and sixty-seven feet. Nearly all of them, however, are situated in the mountains, and possess a mountain air, rather dry, with no sudden or considerable changes in temperature, and fairly abundant sunshine. There are, however, I believe, cases enough more suitable for the lowland climate—Gedding's "aseptic climate without altitude"—as well as those who would do as well there as anywhere, to warrant the construction of sanatoriums in these localities, represented by such places as Lakewood, Aiken, Thomasville, and southern California. It is well to repeat in this connection that climate and altitude are only more or less favorable allies, only a part of the *tout ensemble* of the treatment of phthisis, and not the *tout ensemble*. Better results are to be expected from sanatorium treatment in a mediocre climate than from the open or free treatment under the most perfect climatic conditions. "Wherever they are situated," says Sabourin, "analogous results are obtained. The tuberculous are cured as well in the temperate climates as the cold ones. Altitude plays only a secondary rôle in the cure. The best proof of this is that the most excellent results are perhaps obtained at Falkenstein, a station of only an elevation of thirteen hundred and seventy-eight feet, and whose atmosphere is a little misty or foggy. It

has often been said," he continues, "and it is well to repeat it, that a climate does not exist which cures phthisis, but there is a curative method which is applied in a more favorable manner perhaps in one climate than in another. The superb results obtained in the sanatoriums of medium altitudes show that they respond to the indications of a majority of the cases which present themselves."

Are there no cases, then, for which the open treatment is better adapted? one naturally asks. Yes; if one could be psychologist enough to make the selection. Such patients should possess sufficient strength of will, tenacity of purpose, and mental acuteness to comprehend and faithfully and perseveringly carry out a *régime* carefully arranged and supervised for them by a skilled physician close at hand, and further, their environment should be able to furnish the requisite means for accomplishing this. As a fact, however, I think most of us would agree that such a happy combination of traits and conditions was not frequent, and we can never be sure of knowing with any degree of confidence when it does exist. Consider a moment the requirements: a pure and wholesome atmosphere and constant exposure to it; the best possible hygienic conditions; protection from a new infection either by self-infection or from some other careless patient; good nourishment, with a wholesome, abundant, varied, and attractively served table, the food being especially prepared if the condition demands it, to be constantly under the eye of a specialist in this disease. Facilities for proper physical exercise, when allowable; also for hydrotherapy and massage. Conditions such as will excite hope and secure tranquillity of mind, and promote co-operation in the exertions made to bring about the favorable results. Can, now, these conditions be fulfilled with any degree of certainty or completeness in a free station? I doubt if they can. Frémy, quoted by Knopf, favors open resorts only for those who have no need of a rigorous supervision and a methodic treatment; the suspected cases—scrofulous, bronchitics, the predisposed, or those who have hereditary tendencies—but, as Knopf says, for a patient with phthisis in evolution, who can aggravate his state by the least imprudence or fault; for one, the constant supervision of whom, and whose education, physical and moral, constitutes the principal treatment, a closed establishment is the only way in which he can hope for a cure. The treatment in a free station is illusory.

There still remains the important question of sanatoriums for the poor. This is being widely discussed abroad, and already with substantial results, as I shall show directly in presenting a list of the sanatoriums already established and proposed. For the poor consumptives of our cities—and the majority of them are found there—two classes of sanatoriums or special hospitals will be found necessary, I think: the one in or near the city, to receive the tuberculous of all stages; the other in the country, under more favorable climatic conditions, to receive such cases from the former as are suitable for the climatic cure and who have the most need of its influences. When once the public realizes the value and economy as well as protection that such provision for the poor consumptives will effect, they will not be slow to follow the example of the only state which has, as yet, made such beneficent provision.

Ultimately the state has to provide refuge in its general hospitals, poorhouses, and asylums for the consumptive when he is too ill to work longer. Here he is a menace to the other inmates, and receives little, if any, special treatment, although the expense *per capita* is probably larger than it would be in a special hospital. The favorable results are, moreover, almost nothing, while with the special treatment in sanatoriums many lives would be restored to the working community, which would mean a great economic gain.

As illustrative of the subject, I have endeavored to collect a list of all the sanatoriums now existing in Europe and this country, with a few facts relating to them. I have a list of thirty-three—probably there are more at this writing—great and small, scattered throughout Europe, and most of them at a medium altitude. The three in Switzerland are of high altitude, and those in London, at the Isle of Wight, and the little one in Scotland, are at sea level, as also, I suppose, those, or most of them, in Russia are. Twenty are paying more or less, and thirteen are charitable. Their capacity varies from two hundred and fifty to fifteen. So far as the results are attainable, they are about the same for all—of absolute and relative cures, from twenty-five to thirty per cent.; of improved, forty per cent. or more; or the total minimum of absolute and relative cures and improved, seventy per cent., as calculated by Knopf from forty-five hundred cases. The average duration of residence was from seventy to ninety days.

Besides the sanatoriums already established in Europe, which I have enumerated, there are numerous others, either in process of construction or contemplated, principally for the poor. Switzerland has been especially active in this work. The Canton of Bern has quite or nearly completed one in the village of Schevendi, overlooking Lake Thun, with a capacity of fifty. The Canton Glarus has one projected near Braunwald, with a capacity of twelve to fifteen beds; Bâle, two proposed, one of sixty beds near the city, and the other at Davos-Dörfli; Zurich, one of eighty to one hundred beds, the situation not yet selected. At Leysin, in the Cantons of St. Gallen, Aargau, and in other portions of the country, like establishments are under consideration. In Germany a number of special hospitals for consumptives have recently been established or proposed at Bremen, Breslau, Dresden, Hanover, Cologne, Frankfort on the Main, Worms, and Stettin, and two in Berlin. At Ruppertshain, near Königstein, one, with a capacity of eighty, is nearly or quite completed. In the neighborhood of Vienna a hospital is to be erected for poor consumptives, with a capacity of a hundred beds. In France, at Agincourt and Magny, sanatoriums are projected, or in process of construction.

Some years ago a Mr. M. O. Motschoutkovsky * first advocated the provision of floating sanatoria for people threatened with tuberculous disease, or suffering from its incipient forms, and quite lately he has taken up the subject again with renewed enthusiasm. This zealous hygienist is

* The *Lancet*, April 4, 1896, p. 939.

Sanatoriums for Phthisis in Europe.

Name.	Situation.	Elevation.	Director.	Paying or non-paying.	Treatment.	Capacity.
Sanatorium of Brehmer.....	Görbersdorf in Silesia.	1,840 feet.	Achtermann.	Paying.	Brehmer.	250
Sanatorium of Rompler.....	" "	1,840 "	Rompler.	.....	"	100
Sanatorium of Countess Pückler	" "	1,840 "	Weicker.	Small am't.	"	30
Sanatorium of Falkenstein.....	Falkenstein in the Taunus.	1,378 "	Dettweiler.	Paying.	Brehmer-Dettweiler.	150
Sanatorium for the Poor at Falkenstein.	" " "	1,378 "	"	Non-paying.	"	28
Sanatorium of Davos	Davos, Engadine Valley (Switzerland).	5,159 "	Turban.	Paying.	"	60 rooms.
Sanatorium of Hohenhonnef...	In Honnef, between Linz and Bonn.	774 "	Meissen.	"	"	Largest in Germany.
Sanatorium of Reiboldsgrün ...	Reiboldsgrün, between Saxony and Bohemia.	2,461 to 2,625 feet.	Wolff.	"	"	100
Sanatorium of St. Blasien	Black Forest.	2,534 "	Haufe.	"	"	60
Sanatorium of Badenweiler....	"	1,378 "	Leiser.	"	Not exclusively for phthisis.	
Sanatorium of Nordrach.....	"	.....	Walther.	"	.....	34
Sanatorium of Schomberg.....	"	2,132 feet.	Bandach.	"	.....	
Sanatorium of St. Andreasberg.	Hartz Mountains.	1,968 "	Jacubash.	"	Brehmer.	
Sanatorium of Rehburg (two small sanatoriums).	.....	492 "	Michaelis, Kaatzer.	"	"	15–20
Sanatorium of Neu-Schmecks ..	Austria-Hungary, Carpathian Mountains.	3,293 "	Scontagh.	"	*Cure d'air* and hydropathic; open only in summer.	
Sanatorium of Tonsaasen.....	Norway.	1,968 "	Anvord.	"	.....	90
Sanatorium of Leysin.....	Switzerland.	4,756 "	Burnier.	"	Usual hygienic.	130
Sanatorium of Arosa.	Engadine.	6,188 "	Ewart.	"	Brehmer-Dettweiler.	40
Sanatorium of Weissenbourg...	.....	2,919 "	.....	"	*Cure d'air* only; hydropathic; summer.	Mixed.
Sanatorium of Canigou.....	France, Verne-les-Bains.	2,132 "	Sabourin.	"	Hygienic: *cure à l'ombre.* Does not lodge patients.	
Sanatorium of Craigleith.....	Scotland, near Edinburgh.	Sea-level.	.....	Non-paying.	*Cure à l'air libre.*	15
Royal National Hospital.....	Ventnor, Isle of Wight.	"	Dr. Philip.	Partly charitable.	Eclectic.	134 beds.
Sanatorium of Brompton.....	London.	"	.....	Non-paying.	"	137
Sanatorium of Victoria Park...	"	"	.....	"	"	164
Royal Hospital for Diseases of the Lungs.	"	.....	Dr. Buchanan.	"	"	
North London Hospital for Consumption.	"	Sea-level.	.....	"	"	84
Sanatorium of Alexandra.....	Russia, St. Petersburg.	.....	.....	"	.....	100
Sanatorium of Obouchowsky...	" "	.....	.....	"	.....	150
Sanatorium of Alexandrina....	.....	.....	.....	"	.....	50
Sanatorium of Finland.....	Halila, Finland.	.....	Dr. Gabrlowitch.	"		
Sanatorium of Slavonta.....	Russia.	.....	.....	.....	.....	100
Sanatorium of Ialta.....	Crimea, Russia.	.....	.....	.....	One villa devoted to phthisis.	
Hospital de Wola.....	Near Warsaw, Poland.					

of the opinion that, sooner or later, his scheme will prove a triumphant success, for, according to his plan, the isolation of a dangerous class can be effectively carried out with very little discomfort to its members, for, by a judicious timing of moves, the sufferers will be afforded an excellent chance of recovery under the best and most favorable climatic conditions. The various anchorages planned have one and all their special seasons, and, as these seasons by no means correspond with each other chronologically, a speedy vessel could easily transport the passengers from one to another, thereby gaining the best results from all. The ships for this service are to be specially constructed, and are to be in employment only during eight or nine months in the year, the remaining time being used to clean and thoroughly disinfect them. Mr. Motschoutkovsky is convinced that no sanatorium in the world could surpass his floating palaces in comfort or salubrity, while, as regards variety and change of scene, there can be no comparison. At the present time the well-known shipowning association, the Austrian Lloyds, is having a large steamer constructed, especially adapted and fitted for the accommodation of invalids in need of fresh air and favorable climate, and the anchorages that so far have been selected are at Corfu, Alexandria, Palermo, Messina, Naples, Tunis, and Malta.

There are also various hospitals or sanatoriums in Europe for scrofulous or tuberculous children, most of them on the seashore.

Belgium has two—one at Middelkerke, with a capacity of three hundred, and the other at Venduyne, of two hundred capacity. Holland, three—at Zandvort, the Hague, and Wyk-sur-Mer. Italy has thirteen sanatoriums of this kind on the shores of the Mediterranean and seven on the Adriatic. Each of these hospitals takes in a year, on an average, from fifty to three hundred patients. Denmark has the hospital of Refsnaes, which can receive one hundred and thirty sick children. Austria has a marine asylum at Rovigno, near Trieste. Germany, and quite recently Russia, have followed the example of the other countries of Europe. England has the oldest marine hospital for children at Margate, founded in 1796. France has many hospitals for children on the coast; at Cette, Berck-sur Mer, Cannes, Pen Bron, Arcachon, Banyuls-sur-Mer, Cape Breton, Hyères-Giens, Saint-Pol-sur-Mer, Ver-sur-Mer; and in the mountains, that of Ormesson, one hundred beds; Villiers-

sur-Marne, eighty beds; and Forges les-Bains; also one at Peyraube in process of construction. At Davos, in Switzerland, the Sanatorium Fredericianum for young boys with tuberculous tendencies was founded in 1878.

Progress in this country in the recognition of the value and importance of the sanatorium treatment for its consumptives is slow, and but comparatively little has as yet been accomplished. A wider knowledge, however, of the contagiousness of tuberculosis and of the valuable means of protection which sanatoriums offer is influencing the public mind to a greater and greater extent, so that we may confidently expect in the near future that, either through selfishness from fear of infection or from philanthropic motives, both the national and State governments, as well as individual beneficence, will be active in promoting the establishment of such institutions. In order to obtain as accurate information as I could, I addressed communications to the State boards of health of all the States, and from a majority of them I have received replies. I find that Massachusetts is the only State that has made any public provision for its poor consumptives, having appropriated last year by legislative enactment $150,000 for a special hospital, which has been located at Rutland, Worcester County, one of the highest points in the State. Of the sanatoriums established by private means as business enterprises or by philanthropy, there are but a few that can be strictly so called. The Adirondack Cottage Sanitarium at Saranac Lake, in the Adirondack Mountains, New York, is a monument to the indefatigable exertions and skill of Dr. E. L. Trudeau, who is its director. This is partly charitable, and is within the reach of persons of moderate means. It has a capacity of about seventy-five. The Winyah, at Asheville, N. C., under Dr. Von Ruck and Professor Klebs, for paying patients, has a capacity of about a hundred. The Sharon Sanitarium, at Sharon, Mass., under the direction of Dr. V. Y. Bowditch, has a capacity of nine beds. It has as yet no resident physician. The Hygeia Sanitarium, at Citronelle, Ala., open from October to May, under Dr. J. G. Michael and Dr. A. C. Klebs, for paying patients, has a capacity of about fifty. There are several other institutions scattered about the country for the reception of phthisical patients, but which can not be strictly classed as sanatoriums: the so-called Home in Denver, established by the Rev. F. W. Oakes; the Glockner and Bellevue, at Colorado Springs; the Lyndhurst Sanitary Homes, near Denver; a small private institution at Boerne, Texas, not exclusively, however, for consumptives; a Home for Consumptives at Chestnut Hill, near Philadelphia; the Rush Hospital for Consumptives and Allied Diseases, in Philadelphia. The House of Rest for Consumptives, forty beds; St. Joseph's Hospital, three hundred beds; the Dispensary for Consumptives, twelve beds—all in New York city. The Seton Hospital, Spuyten Duyvil, New York city, has one hundred and twenty beds and thirty private rooms.

The Free Home for Consumptives, twenty-seven beds, and soon to be enlarged to one hundred beds, is in Dorchester, Mass. One at Liberty, Sullivan County, N. Y., is soon to be opened, and one near Paul Smith's, Adirondack Mountains, under the charge of the Sisters of Charity, is to be opened within a few months. In Canada one is projected in the Laurentian Mountains; it is to be a national sanitarium and to be built upon the cottage plan.

Through the efforts of the Invalid Aid Society of Boston a bill was introduced into the United States Senate by Senator Gallinger, of New Hampshire, granting to the Society the abandoned Fort Marcy military reservation in New Mexico, for the purpose of a national sanitarium for the treatment of pulmonary disease. Senator Gallinger writes me that the bill is now under consideration by the Committee on Public Lands of the House of Representatives, having passed the Senate; he adds that he has strong hopes that it will become a law. Fort Marcy is about seven thousand feet in altitude, contains seventeen acres, and has good buildings. Fort Union reservation in the same State has also been obtained for a private sanatorium for the exclusive treatment of phthisis. In the report of the Governor of New Mexico for the year ending June 30, 1895, Dr. Francis Crosson, who makes the special report upon the climate of that region, states that plans are now almost complete for the erection of a large sanatorium, to be located either at Santa Fé, Las Vegas, or Ojo Caliente, by a syndicate of physicians of St. Louis, to carry out Dr. Paul Paquin's new treatment of consumption by "immunized serum." He also adds that establishments of a similar character are now in contemplation by the Masonic and Odd Fellows' fraternities.

It seems to me that it is to be deplored that the main object of all sanatorium treatment—namely, the hygienic—should in any way be obscured in these laudable attempts to establish special institutions for the treatment of consumption by the more specious claims of special methods of treatment or specifics. It is well to again repeat that up to the present time there has been discovered no specific which will cure consumption, and the best results have been, and are now, obtained by the hygienic, open-air treatment, as illustrated in the best-equipped and conducted sanatoriums. The extraordinary and unexpected, like the X rays, may at any time happen in the discovery of the devoutly desired specific or immunized serum; but when it does come, if ever, there will still be as great a need of sanatoriums as at present, where the damage left in the wake of the dislodged and routed bacillus and his confrères can be repaired, and the battered body gently and skillfully restored for further service.

Bibliography.

Léon-Petit. *Le Phtisique et son traitement hygiénique.* Paris, 1895.

Knopf, S. A. *Les Sanatoria. Traitement et prophylaxie de la phtisie pulmonaire.* Paris, 1895.

Sabourin, Ch. *Traitement rationnel de la phtisie.* Paris, 1896.

Thorne, W. Bezly. *The Open-air Treatment of Phthisis.* London, 1894.

Von Ziemssen. Treatment of Disease by Climate. *Handbook of General Therapeutics*, vol. iv.

Hance, Irwin H. A Study of the Infectiousness of the Dust in the Adirondack Cottage Sanitarium. Reprint from the *Medical Record*, New York, 1896.

Von Ruck, Karl. *The Climate of Western North Carolina.* 1896.

Reports of the Adirondack Cottage Sanitarium.

Reports of the Glockner and Sharon Sanitariums.

A CONTRIBUTION TO THE STUDY OF HERETOFORE UNDESCRIBED NEUROSES OF THE LUNGS.*

By ALBERT ABRAMS, A. M., M. D., Heidelberg,
PROFESSOR OF PATHOLOGY, COOPER MEDICAL COLLEGE, SAN FRANCISCO.

It is the object of the writer of this paper to submit a few observations in a direction believed to be substantially new, and to present succinctly some conclusions at which he has arrived from a careful examination of premises established by clinical and experimental observations. Before doing so, it will be apposite to state the premises upon which the conclusions are formulated.

The first proposition is, that there are conditions of nasal reflex genesis manifested by dilatation and contraction of the lungs.

The second proposition is, that the pulmonary neurosis of dilatation can be invoked in almost every healthy individual by irritation of the nasal mucosa in a manner hereafter to be described, and conversely, that this condition can be dissipated after removal of the source of irritation.

The third proposition is, that similarly, collapse of definite lung areas can be overcome reflexly by the action of cocaine on the terminal ends of the trigeminus in the nasal mucous membrane.

The fourth proposition is, that clinical and experimental investigations made by the writer presuppose hypothetically an innervation of the lungs which has its analogue in the vaso-motor nerves.

During the last decade many observations have been recorded of varied reflex and neurotic affections of different organs manifested by motor, sensory, trophic, and vaso-motor disturbances. A few of such observations may be regarded as apocryphal. After a judicious elimination, however, of some of the cases thus cited in the literature on this subject, there remains a preponderance of evidence in favor of the opinion that the nasal mucosa plays an important rôle in the genesis of many affections the ætiology of which has heretofore been obscure.

The writer frequently encountered in his *clientèle* individuals presenting the symptomatic picture of pulmonary vesicular emphysema in whom was associated some abnormity of the nose. The anomaly was a simple coryza, spurs, deflection of the sæptum, hypertrophic rhinitis, or polypi. At any rate, after eradication of the nasal abnormity, the symptoms of pulmonary dilatation disappeared. The form of emphysema here cited is in reality an acute dilatation of the lungs, an eradicable condition dissociated with the anatomico-pathological conditions conventionally allied with emphysema. The typical clinical picture of acute lung dilatation could nearly always be made to disappear by aid of the cocaine test, which constitutes in this form of pulmonary neurosis a diagnostic aid of unquestioned value. After the application of a cocaine solution to the nasal mucosa the lung borders could be made to recede, and the lung resonance and normal vesicular respiration were restored.

The pulmonary neurosis of dilatation can be invoked in almost every healthy person by irritation of the nasal mucosa. This condition can be attained by firmly compressing cotton in both nasal cavities. The degree of lung dilatation, with its concomitant phenomena, will naturally vary according to circumstances which modify other reflex acts. After the introduction of the cotton a few minutes elapse before percussional results are noted. One will then observe superresonance and immobilization of the lung borders and diminution of the areas of hepatic and cardiac dullness in the latter instance, even to obliteration. The auscultatory signs of lung dilatation are less constant and pronounced. Removal of the source of nasal irritation is followed in a very few minutes by a complete restitution of the normal condition. Irritation of one nasal cavity only does not yield manifest results. If the mucosa of both nasal cavities has been thoroughly cocainized before the introduction of the cotton no dilatation of the lungs ensues. Compression of the nasal cavities by pressure on the nose likewise yields negative results. In the writer's investigations no attempt was made to locate special areas in the nasal mucosa, the irritation of which conduce to lung dilatation. Experiments on rabbits and frogs prove the correctness of the clinical observations just cited.

Collapse of definite lung areas can be overcome in a reflex way by cocainization of the nasal mucosa.

In previous articles the writer has sought to establish the frequent occurrence of pulmonary atelectasis. His observations have been accorded as yet only inconsiderable attention by the medical profession. A summary of his work on this subject is herewith appended.*

There are present over the thorax of apparently normal individuals constant areas of diminished lung resonance, varying from dullness to flatness, as obtained by percussion. The areas vary in number and situation, as far as the individual is concerned, but admit in the aggregate of definite localization. The areas of dullness—or atelectatic zones, as the writer will call them—are no longer demonstrable by percussion after repeated forced inspirations.

In referring to the form of atelectasis under consideration as physiological, the writer does so with the object of employing the term for distinction only. Physiological atelectasis, as he views it, is an eradicable condition dissociated from any demonstrable lesion. While it is true, from the standpoint of the physiologist, that the lungs during life are in a stretched condition, it is equally true from the position of the clinician that certain portions of the lungs are collapsed and so deprived of air as to

---

* Read before the Medical Society of the State of California at its twenty-sixth annual meeting, April 22, 1896.

* Pulmonary Atelectasis as a Cause of Anæmia. *Transactions of the Medical Society of the State of California*, April, 1892.

Observations on Physiological Pulmonary Atelectasis. *Ibid.*, session of 1894.

Pulmonary Atelectasis as a Cause of Anæmia. *Medicine*, December, 1895.

yield a dullness, or in some instances a flatness, on percussion. These areas of dullness, determined by linear percussion, vary from the size of a twenty-five-cent piece to that of a silver dollar, or even more. The atelectatic zones are only permanently absent when the lungs are emphysematous, and temporarily so after repeated deep inspirations. The writer has noted in his investigations that after forced inspirations are made the atelectatic zones in adults as well as in children can be dispelled, reappearing in a few minutes when tranquil breathing is resumed, and continuing so till an increased demand is again made on the vital capacity of the lungs.

The facts just enunciated do not refer to the areas of lung tissue intermediary to the atelectatic zones, for we already know from the observations of others, notably De Costa, that when so-called respiratory percussion is made over the lungs at the end of full inspiration, a sound of higher pitch and vesiculo-tympanitic quality is obtained; whereas a sustained expiration diminishes the resonance.

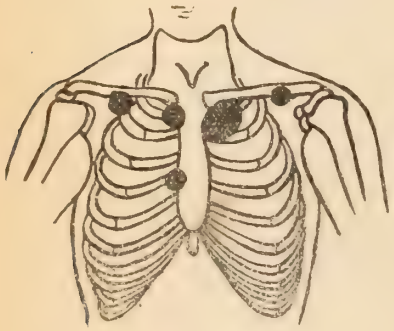


Fig. 1.

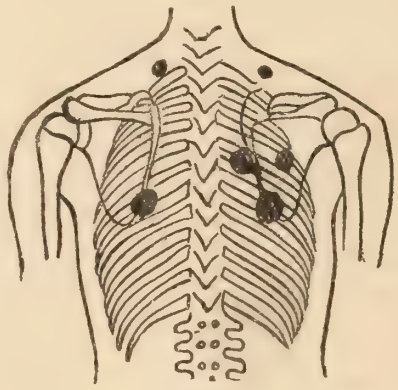


Fig. 2.

The writer has projected a composite picture defining the situation of the atelectatic zones based on an examination of over a hundred apparently healthy individuals, children as well as adults (Figs. 1 and 2).

The atelectatic zones, as shown in the illustrations, do not represent the only areas of lung tissue that are incapacitated, for, aside from the fact that collapsed lung remote from the chest wall will elude percussion, there are other superficial areas of too limited an extent to yield a dullness on percussion.

The writer, in his previous communications on the subject of pulmonary atelectasis, has never been able to explain the genesis of the areas of atelectasis. He formerly regarded their occurrence as pathognomonic of insufficient lung development. In the light of his investigations, he is inclined to regard them as evidence of reflex origin provoked by irritation of the terminal ends of the trigeminus in the nasal mucous membrane. While it is true that the atelectatic zones can be dispelled by repeated deep inspirations, it is also true that cocainization of the nasal mucosa is more effective in attaining the same object.

The final proposition merits our attention—viz., that *clinical and experimental investigations suggest an innervation of the lungs analogous to the vaso-motor system of nerves.*

It is unnecessary at this time to descant on the physiology of pulmonary innervation. In explanation of the two conditions described by the writer—viz., dilatation and atelectasis of the lungs—it is necessary to hypothesize the existence of two distinct functions of the vagus nerve, or at any rate afferent fibres with two distinct functions; afferent fibres which can dilate and afferent fibres which contract the lungs by the application of the appropriate stimuli. That such is actually the case, physiological experimentation has already demonstrated; the application, however, of the physiological principles has heretofore, to a certain extent, been disregarded by clinical observations. Thus, physiology has taught us that stimulation of certain vagus fibres stops inspiration and produces expiration; whereas stimulation of other fibres stops expiration and produces inspiration. There is no question but that the bronchial muscles can be excited to tonic contraction under the influence of the vagus nerve. The writer has noted dilatation of the lungs in animals following irritation of the nasal mucosa. In frogs he has observed the same phenomenon under the microscope. The results were always negative when the nasal mucosa was cocainized before irritation of the mucous membrane was attempted.

The writer believes that the phenomena of lung dilatation and contraction as neuroses can be provoked at any point in the extensive course of distribution of the pneumogastric nerves, but maintains that the stimuli are conspicuously present in the nasal mucous membrane, where they act indirectly on the vagus nerves through the terminal fibres of the trigeminus. For convenience of explanation the writer has denominated that set of fibres which dilate the lungs as *broncho-dilator nerves*, and those which contract the lungs as *broncho-constrictor nerves.* In the action of these two sets of nerve fibres the vaso-constrictor and vaso-dilator nerves of the vaso-motor system may be cited as analogous. The dilatation of the lungs referred to in this article by the writer is a substantive affection which is in no wise identified with asthma as conventionally understood. Experiment has repeatedly failed to produce asthma by artificial irritation of the normal nasal mucous membrane; this is not the case, as we have already learned, with reflex dilatation of the lungs. The latter condition, when of nasal origin, can always be dissipated by anæsthetizing the mucous membrane of the nasal spaces with cocaine. When this test fails, the source of irritation must be sought for elsewhere in the distribution of the pneumogastric nerve.

No. 431 Geary Street.

The Essential Unity of Spirit of the English-speaking Races is illustrated in the subtitle of the *South African Medical Journal*, published in Cape Town. It reads: "Including Leading Articles on Subjects interesting to the Profession, and Annotations from the leading English, American, and Foreign Journals."

A FATAL CASE OF CHRONIC NEPHRITIS

PRESENTING AN EXTRAORDINARY COMBINATION OF SYMPTOMS.

By C. E. SKINNER, M. D.,
NEW HAVEN.

A CASE presenting an extremely puzzling combination of symptoms came under my care a short time since, and was widely and copiously reported and commented upon in the secular press. Because of its notoriety and the very unusual symptomatic phenomena, I believe that a report of it will be of interest to the profession.

Miss S. B., twenty-two years of age, had been in my employ as office assistant for the preceding twenty-one months. In addition to her work for me, she had occupied the position of assistant bookkeeper to her brother, who is employed by a large building contractor. Her organization had always been delicate, her temperament was hysterical, and she was easily exhausted by any excessive mental or physical strain. The indispositions from which she had suffered while under my observation had always been readily amenable to treatment, and had manifested nothing peculiar.

The only noticeable points about her family history were that her maternal grandfather, who was a sea captain, had died of consumption, probably acquired, and that one paternal uncle had died of Bright's disease. Her mother has always been delicate, but no pronounced constitutional tendencies are apparent. Her father's health is excellent.

For the last year Miss B. had had attacks of acute nervous exhaustion about once every three months. She had recovered readily in three or four days under rest and tonics, but invariably returned to her work before she was fit to do so. From November to April she had suffered from an intractable bronchitis, especially prominent in the right lung, but this had ceased to trouble her about a month preceding her death. She had had frequent headaches during this period, but I was able to find no cause for them except debility and errors of refraction. I was unable to overcome the debility, which failure I attributed to her persistence in overworking herself, but correction of the refractive errors improved the headaches considerably, so much so that with the help of an occasional dose of ammonol she was able to get along very comfortably. This drug, as will be seen later, was given a very undeserved prominence among the possible causes of Miss B.'s death, which were discussed by the ignorant as well as the learned after the fatal termination. She had also had frequent attacks of morning nausea, which would sometimes last all day, for two or three days at a time; she had not slept well all winter, but this had been a common condition with her for several years when she was overwrought. She occasionally had slight attacks of nosebleed, and during the period of bronchitis she coughed up blood-stained mucus frequently. Her menstruation was irregular at all times, and had occurred at intervals of two weeks for two months before her death. Repeated examinations of the urine had never shown any trace of albumin. No œdema was noticed, and no convulsions had occurred; the heart sounds were normal; the evening temperature during the period of bronchitis had uniformly varied from 100° to 102·5° F., with a fall of from one to three degrees below normal in the morning. This had steadied pretty much to the normal for about a month before her death, when she had begun to gain weight and felt, as she expressed it, more like herself again.

Miss B. came to my office to begin her duties as usual about ten o'clock on Friday morning, just as I was leaving. As I was in a hurry, I passed the compliments of the morning with her and went out, but noticed nothing unusual about her. She appeared bright and cheerful as was her wont. When I saw her next, at one o'clock, her appearance was greatly changed; her face was darkly flushed, her eyes looked heavy and were half closed, and she staggered as if scarcely able to stand. In response to my inquiry, she stated that her head had begun to ache, and that she had begun to feel feverish and weak shortly before noon, which sensations had been increasing ever since. Remembering that I had seen her in a very different condition three hours previously, I asked her if she had felt chilly at any time that morning, and she answered that she had shortly after I left the house. I immediately came to the conclusion that she was suffering from a malarial paroxysm, and invited her to lie down on a couch in my library until she recovered. She did so, and immediately dropped off to sleep. Her pulse was high; her temperature was not taken. About half-past one she awoke and addressed some remark to me, and when I had responded she immediately went to sleep again. About two o'clock I noticed that her breathing had become stertorous and very slow, and I tried to awaken her without success. The pupils were widely and symmetrically dilated, the muscular system was relaxed, except that of the jaws, which were quite rigidly set, the respirations were becoming less and less frequent, and cyanosis was pronounced. The pulse was very rapid, but regular and of good tension. I summoned the assistance of women, loosened her clothing, gave her a hypodermic injection of a sixtieth of a grain of strychnine sulphate with a hundredth of a grain of atropine, and telephoned to Dr. S. D. Gilbert, who very kindly responded immediately. The patient's temperature was taken and found normal. Immediately after Dr. Gilbert's arrival we sent for Dr. W. G. Daggett, whose response was no less prompt. We gave another hypodermic injection of a sixtieth of a grain of strychnine sulphate and a fiftieth of a grain of nitroglycerin and, at Dr. Daggett's suggestion, prepared to administer oxygen by inhalation. At this time the respiration had dropped to two a minute, and the pulse was 144. The oxygen was productive of some benefit, and the cyanosis grew somewhat less. Dr. L. S. DeForest was then sent for, and proposed electrical stimulation of the cervical sympathetic. Reaction to a weak primary current was fairly good for voluntary muscles; the respiration was increased to twelve a minute.

The patient had had, altogether, up to this time (five o'clock), in divided doses, a fourteenth of a grain of strychnine sulphate, three one-hundredths of a grain of nitroglycerin, and one one-hundredth of a grain of atropine. Her temperature had risen to 100°, and her pulse was 140. Her condition remained practically unchanged until 5·45 P. M., when a hypodermic injection of a sixtieth of a grain of strychnine and a hundredth of a grain of digitalin was given. About six o'clock the respiration failed again, but was easily brought back to fourteen a minute with the battery. About half-past nine a stomach tube was introduced and the organ washed out, the washings being preserved for chemical examination, and four ounces of strong black coffee with an ounce of whisky were thrown in before the tube was removed. A catheter was passed and the urine drawn and found albuminous. I remained by the patient's bedside all night; the temperature rose steadily until it reached 105° at four o'clock on Saturday morning. The respiration at this time had increased to thirty a minute. Slight twitching of the eyelids was apparent about this time, and for several hours after at intervals, and this was the only evidence of convulsive action manifested until

just before death, when the facial muscles also became involved. Digitalin, strychnine, and nitroglycerin had been administered at intervals during the night, and oxygen by inhalation constantly.

The use of oxygen was discontinued about eight o'clock on Saturday morning, but the hypodermic injections were given at intervals until the patient was moribund. The temperature fell to 103·8° at one o'clock, but had risen to 106·7° three hours later. This was the highest point reached. The patient died at 10.40 o'clock on Saturday evening.

The peculiar combination of symptoms—viz., coma, widely dilated pupils, muscular relaxation, and absence of reflex, except the masseteric, extreme depression of the respiration, and rapid pulse, remaining strong for several hours after the original seizure, and the continued warmth of the extremities—involved the diagnosis in great doubt. No disease was thought of that would produce such a combination. Poisoning with some drug was suggested, but no drug was proposed that could produce the condition. Finally it was learned that Miss B. had taken ammonol for her headaches on my prescription. The effects of the drug were not familiar to the physicians present, except myself, and it was suggested as a possible cause of Miss B.'s death. The secular press in some way gained the information and the report was circulated far and wide; a very great injustice to ammonol, which could not by any stretching of its abilities produce such symptoms as obtained in this case. In addition to this, the druggist certified that her last purchase of the drug was of thirty grains divided into three powders, and took place about six weeks before her death. Her mother says that Miss B. gave the last of these powders to her for a headache about ten days before she died; so that she could not have taken any ammonol for at least ten days before she was taken sick, and it is pretty certain that the interval between her last dose of ammonol and her death was even longer. The drug is a coal-tar product, and poisoning by coal-tar products is not ordinarily accompanied by a regular pulse of high tension, however rapid, and a rise of temperature following closely the original attack. Miss B.'s temperature had risen to 100° within three hours after she became comatose, and reached 106·7° before she died. The pulse did not begin to fail until at least two hours after coma developed, and then only temporarily, soon returning to its former tension. It continued good, on the whole, until well into the evening—that is, for some hours after the drug suggested as having been ingested should have expended its most weakening influence upon the circulation. Chemical examination of the stomach washings showed nothing to indicate the presence of ammonol. I have dealt thus fully with the ammonol aspect of the case, because a great injustice has been inflicted upon a very reliable, safe, and efficient drug. I have used large quantities of it during the last two years, and have never seen any evil effects whatever from its administration.

The autopsy showed intense congestion of the lungs, nutmeg liver, and the capsules of the kidneys stripped off more easily than normal. Microscopical examination of the kidneys showed destruction of the tubular epithelium, and some hyaline casts were found in the last urine taken through a catheter a few hours before death.

My diagnosis of the case is chronic nephritis exacerbated by an acute attack of *la grippe*.

I append the following:

"New Haven, Connecticut, *June 2, 1896.*

"After careful investigation of the cause of the death of Miss B., May 23, 1896, I find, by post-mortem examination, that she had Bright's disease, with hyaline casts in the urine and many of the tubules partly denuded of epithelium.

"She also had nutmeg liver and congestion of the lungs. She was taken with profound coma about 1.30 P. M., May 22d, with very slow respiration and dilated pupils. Pulse and temperature normal. Pulse soon grew rapid. In three hours pulse rose to 140, and temperature 100° F. She lived thirty-four hours, and her temperature rose to 106° F.

"She had used ammonol for headache, in five- or ten-grain doses, for two years, to an amount which would probably equal sixty grains, or more, in a month, but there is no evidence that she had taken any ammonol for two weeks previous to her death.

"The post-mortem gave no evidence of the presence or action of ammonol, and chemical examinations of washings from the stomach, taken three hours after coma set in, gave no trace of the presence of ammonol, and there is nothing in her symptoms and mode of death which would indicate that death was caused, in whole or in part, by ammonol."

[Signed] Moses C. White, M. D.,
Professor of pathology in the Medical Department of Yale University and medical examiner for the coroner.

A *RÉSUMÉ* OF THE USES OF FORMALIN.*

By GEORGE C. FREEBORN, M. D.,
INSTRUCTOR IN NORMAL HISTOLOGY IN THE MEDICAL DEPARTMENT OF COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK; PATHOLOGIST TO THE WOMAN'S HOSPITAL IN THE STATE OF NEW YORK; PATHOLOGIST TO THE NEW YORK OBSTETRICAL SOCIETY.

This reagent is also known in commerce under the names of formol and formalose. It is a forty-per-cent. solution of the gaseous body, formic aldehyde (HCOH), in water. It is prepared by oxidizing methylic alcohol and bringing the resulting gas into solution in water. It is non-inflammable. It mixes in all proportions with alcohol and water. Its power of penetration is good. Its keeping properties are good. A series of experiments were instituted to determine this point, with the following results: A forty-per-cent. solution was kept in open and closed vessels, daily tests being made. The results of these experiments showed that the solutions did not decompose. There was a loss of 1·6 per cent. of formalin and an increase of 0·1 per cent. of formic acid. Polymerization took place with the formation of a butterlike mass containing sixty per cent. of formic aldehyde; this dried up into a hard mass which contained eighty-five per cent. of formic aldehyde. Fish and others advise that it be kept in darkened bottles, as the light may decompose it. In an experience of two years I have not noted any appreciable change in the solutions.

Attention was first called to the antiseptic properties of

* Read before the New York Pathological Society, March 23, 1896.

formalin by F. Blum, in 1893. In 1894 Pottevin found that when formalin was added to cultures of bacteria, their growth was arrested. Cohn also found that solutions and the vapor of formalin killed bacteria both in the vegetative and in the spore stage, but that it had but little action on molds unless used in strong solutions. This want of action on molds has also been noted by many other observers.

Miquel, in experimenting with gaseous formic aldehyde, found that it acted as a disinfectant for small and loose objects confined in small spaces, but was not reliable for disinfecting large rooms.

Cambier and Brochet also experimented with the gaseous form, with results similar to those of Miquel. Their laboratory experiments were satisfactory, but their attempt to disinfect a large room did not give perfect results. They, however, demonstrated the fact that layers of dust a centimetre thick were rendered sterile. They also devised a portable apparatus for producing the gas.

Alleger made quite an extensive series of experiments in order to determine the germicidal action of formalin on bacteria. He made use of cultures of the bacillus of diphtheria in Petri dishes. The surfaces of these dishes were sprayed with solutions of formalin varying in strength from 1 to 10,000 to 1 to 100. He found that a solution of 1 to 2,000 prevented the growth of the bacillus but not that of molds. Another series of experiments were made with stick cultures in test tubes. Five drops of solutions of formalin, varying in strength from 1 to 20,000 to 1 to 100, were placed on the surface of the culture media in each tube. At the end of forty-eight hours none of the tubes which had been treated with a 1-to-100 or stronger solution showed any growth. A third series of experiments were made with smear cultures, which were allowed to grow for from twenty-four to forty-eight hours and then they were treated with the above-mentioned solutions of formalin for a few minutes. Cultures were then made from these, with the result that no growth took place from those treated with the stronger solutions.

Formalin has also been used in surgery, obstetrics, and gynæcology as an antiseptic, but has had to be abandoned on account of its irritating properties.

As a preserving agent formalin was first used by the botanists. Cohn experimented with it extensively, and found that the green and red colors of plants were not extracted. At the end of five months his specimens still retained their natural colors and were not shriveled. The botanists Sadebeck and Holfert recommend it highly.

It was first introduced into the zoological technique by F. Blum, who obtained excellent results with it as a preservative agent, and it has now come into general use.

The excellent results obtained by the botanists and zoologists with formalin as a preservative soon resulted in its introduction into the anatomical and histological technique, and at the present time it is quite generally used.

As a preservative agent for gross specimens, it is used in the strength of two per cent.,* though weaker solutions, from three quarters to one per cent., have been used. These weaker solutions are objectionable on account of the likelihood of the growth of molds, and because they cause more or less swelling of the tissues. As the result of the experience of numerous observers, it appears that five-per-cent. solutions give better results.

The quantity of the solution should be large—a hundred times the volume of the specimen—and the fluid should be renewed at the end of twenty-four hours. In some cases it is well to renew the fluid a second or even a third time.

Formalin used in this manner preserves the natural form, the transparency, and, to a certain extent, the natural color of the specimens. In some specimens the blood-color appears to be bleached out, but if the preparation is placed in strong alcohol this is nearly if not entirely restored.

For preserving the blood-color of specimens, Johres makes use of the following procedure and fluid:

Sodium chloride.....	1 part;
Magnesium sulphate.....	2 parts;
Sodium sulphate.....	2 "
Water.....	100 "

To this mixture are added from five to ten parts of a forty-per-cent. solution of formalin. After the specimen has become sufficiently hardened, pour off the formalin solution, wash the specimen in ninety-five-per-cent. alcohol, then keep it in ninety-five-per-cent. alcohol until the blood-color becomes restored, and finally preserve it in a mixture of equal parts of glycerin and water.

Fish makes objection to the use of formalin as a permanent preservative on account of the large amount of water present, which might cause freezing, and advises the addition of an equal volume of alcohol. Hodenpyl,* in using formalin for making sections on the freezing microtome (see below), found that the least trace of formalin left in the specimen prevents its freezing. It would therefore seem that Fish's objection is not valid.

Koehler and Lumière found that if from fifty to a hundred and fifty cubic centimetres of a solution of one volume of formalin diluted with four volumes of water were injected into the gastro-intestinal canal of small animals by the mouth and anus, also into the carotid artery, and the animal was kept hung up in the air, in a dry place, for some weeks, it was perfectly preserved without distortion. They performed an autopsy on an animal—a guinea-pig—treated in this manner, four months after, and found the tissues

* Bolles Lee (*Anat. Anz.*, xi, 1895, p. 253) calls attention to what he considers an inaccurate use of the terms formol, formalin, and formaldehyde; also to the manner of stating the percentages used. He maintains that the proper way of stating the strength of the solutions is to say "formol or formalin diluted with so many volumes of water."

Parker and Floyd (*Anat. Anz.*, xi, 1896, p. 567) reply to the criticism made by Bolles Lee in the above-cited article. They contend "that for the saké of consistency the same method of expression ought to be used for alcohol—*i. e.*, ninety-five volumes of alcohol and five volumes of water. These expressions seem to us unnecessarily cumbersome, and as they are in no way more precise or less ambiguous to one familiar with the meaning of per cent. than the expressions we used, we prefer them."

* Personal communication.

and organs perfectly preserved. Dr. Henry Power* has treated the bodies of children in a manner similar to this with good results.

Professor George S. Huntington informs me that he has used formalin for the preservation of organs. He injects a solution of from two to twenty-five per cent. into the blood-vessels, and the result is a perfect preservation of the form and color of the organ. He has found that it is of no use for preserving dissecting material.

For the preservation of brains formalin has given excellent results. The fresh brain is placed in a ten-per-cent. solution, and at the end of ten days it will have sufficiently hardened to permit of the making of thick sections for demonstration of the gross anatomy, the distinction between the white and gray matter being more sharply defined than when alcohol is used.

Parker and Floyd confirm the observations of Lanzilotti-Buonsanti, Hoyer, Hoffer, and others, in regard to the swelling of the brain when formalin alone is used. In a sheep's brain they found this swelling to be forty per cent. of its original volume. In order to correct this defect they experimented with various reagents in combination with formalin. They finally found that a mixture of six volumes of ninety-five per-cent. alcohol and four volumes of a two-per-cent. solution of formalin gave nearly perfect results. Sheep's brains hardened in this mixture retained their original color and form, and were very little increased in volume. "A brain that before treatment (June 20th) measured one hundred and one cubic centimetres, when finally prepared (July 15th) measured one hundred and three cubic centimetres."

Fish states that an excellent hardening of the brain may be obtained with the following mixture:

Water	2,000 c. c.;
Formalin	50 "
Sodium chloride	100 grms.;
Zinc chloride	15 "

The specific gravity should be about 1·05. The brain is left in this mixture for a week or ten days. The blood-vessels and cavities should be injected with the fluid if possible. After the end of the ten days the brain is transferred to formalin, 50 cubic centimetres, and water, 2,000 cubic centimetres, where it may be kept indefinitely; or, after being a week in this fluid, it may be first transferred to fifty-per-cent., then to ninety-per-cent., and finally to ninety-five-per-cent. alcohol. He has also treated portions of the adult central nervous system by this method, and afterward with mercuric chloride, picro-aceto-sublimate, and chromacetic-acid mixtures, with good results.

For hardening eyes Leber used formalin mixed with water in the proportion of one to ten. The natural color and transparency of the organ were retained. The cornea and lens became but slightly cloudy. In his opinion, the fine structure was as well preserved as with Müller's fluid. If the eyes were placed in alcohol the cornea and lens became opaque. I have employed formalin in a five-per-cent. solution for this purpose with the same results.

* Personal communication.

As a hardening agent for microscopic work, formalin has been used very extensively, the strength of the solutions employed varying from one per cent. to the full strength—forty per cent. As the results of many observations, it may now be said, with possibly one or two exceptions, that formalin alone is an unfit reagent for hardening tissues for microscopic work. It was condemned by Hermann in 1893; Lachi states that it has an injurious effect on connective tissues, smooth and striated muscle, and embryos. Many other observers condemn its use without being so specific as Lachi.

The exceptions, where it gives satisfactory results, are mucous membranes and the central nervous system. I have used it in five-per-cent. solution for hardening cystic adenoma of the ovary, with good results; also for the mucous membrane of the uterus.

Lachi, who has condemned its use for all other tissues, speaks well of its action on the central nervous system.

Van Gieson has employed it in four-, six-, and ten-per-cent. solutions for hardening the central nervous system. The ganglion and nerve fibres were well fixed. Sections stain well with Weigert's hæmatoxylin method. He has also used it for hardening the central nervous system for after-staining with Rehm's modification of Nissl's method. The results were good, but not quite so sharp as with alcoholic hardening.

The best results for microscopic work are obtained when formalin is combined with other fixing reagents. When it is used in combination with the chrome salts more rapid penetration is obtained, whereby the time required for hardening is shortened. I have used a solution of formalin in Müller's fluid made as follows:

Potassium dichromate	2 grammes;
Sodium sulphate	2·5 "
Two-per-cent. solution of formalin	100 c. c.

With this fluid I have obtained excellent preservation of the ovary, the uterus, etc. At the end of forty-eight hours the specimen is cut into slices an eighth of an inch thick; these are washed in water for two hours; they are then placed in alcohol for twelve hours, and then carried through the usual processes of imbedding in celloidin. Specimens hardened in this manner show no shrinkage, and the tissue elements are well preserved.

Landowsky recommends the following fixing fluids for mitotic figures in cells:

1.	Water	20 c. c.;
	Alcohol (ninety-five per cent.)	10 "
	Formalin	3 "
	Hydric acetate	0·5 "
2.	Water	30 c. c.;
	Alcohol (ninety-five per cent.)	15 "
	Formalin	5 "
	Hydric acetate	1 "

Probably the most successful use of formalin in histological technique is its substitution for osmic acid in the osmium-dichromate fluid used in Golgi's silver method for the central nervous system.

This substitution was probably first made by Dr. O. S.

Strong, though it has been recommended by Lachi and others. Strong employs the following mixture:

Potassium dichromate (3·5- to five-per-cent. solution)..... 100 vols.;
Formalin..... 2·5 to 5 vols.

After the specimen has been in the solution for several days it is transferred to a one-per-cent. silver-nitrate solution; or at the end of two days it is transferred from the formalin-dichromate mixture to the following:

Potassium dichromate (five-per-cent. sol.)... 2 vols.;
Formalin..... 1 vol.

After remaining in this fluid for from twelve to twenty-four hours it is placed in the silver solution. The advantages of this method are, that the stage of hardening is prolonged, the stage favorable to impregnation lasts longer, and the results are more certain. For embryonic tissue he does not consider it as good as the osmic-dichromate mixture.

Fish has used the above-described method, but thinks he has obtained better results with the following:

Müller's fluid..... 100 c. c.;
Formalin (ten per cent.)..... 2 "
Osmic acid (one per cent.)..... 2 "

Strong has also used formalin as an injection medium for hardening brains *in situ*. He uses formalin diluted with an equal volume of water. This he injects into the cerebral vessels until it runs out of the cut jugulars. After a few minutes he makes a second injection, then a third, and even a fourth, at intervals of fifteen minutes. The brain is then removed from the cavity of the skull. The swelling which usually occurs when formalin is used does not take place. Sections from brains hardened in this manner may be stained by either the Weigert or the Golgi method. When the Golgi method of staining only is to be used an equal volume of a ten-per-cent. solution of potassium dichromate is added to the formalin in place of the water.

Dr. T. S. Cullen has devised two methods for using formalin in connection with frozen sections. They are as follows:

Method I.

1. Keep sections made with the freezing microtome in a five-per-cent. aqueous solution of formalin for three to five minutes.
2. Keep them in fifty-per-cent. alcohol for one minute.
3. Keep them in absolute alcohol for one minute.
4. Wash them in water.
5. Stain them in hæmatoxylin for two minutes.
6. Decolorize them in acid alcohol (1·5 per cent. HCl).
7. Wash them in water.
8. Stain them with eosin for twenty seconds.
9. Place them in ninety five-per-cent. alcohol.
10. Pass them through absolute alcohol, clear them in creosote or oil of cloves, and mount them in Canada balsam.

The blood being lost in the frozen sections, the defect was overcome by fixing the tissue in formalin, and then making frozen sections as in

Method II.

1. A piece of tissue $1 \times 2 \times 5$ centimetres is kept in a twenty-per-cent. aqueous solution of formalin for two hours.
2. Frozen sections are made.
3. Keep them in fifty-per-cent. alcohol for three minutes.
4. Keep them in absolute alcohol one minute.
5. Wash them in water and stain them in hæmatoxylin for two minutes.
6. Decolorize them in acid alcohol (1·5 per cent. HCl).
7. Wash them in water.
8. Stain them in eosin for twenty seconds.
9. Place them in ninety-five-per-cent. alcohol.
10. Pass them through absolute alcohol, clear them in creosote or oil of cloves, and mount them in Canada balsam.

Method I is used for diagnosticating bits from tumors, and it is possible to make a report in fifteen minutes. Method II is used mostly for the examination of uterine curettings. The author's practice is to have bottles containing a ten per-cent. solution of formalin in the operating room. The curettings are immediately placed in one of these, and by the time they reach the pathologist they are hard enough to make frozen sections of.

Bender has also used formalin for making frozen sections, not for preliminary hardening, as in Cullen's method, but for completing the hardening of specimens that have already been in alcohol. He places pieces of tissues, two millimetres thick, that have been in alcohol, in a one-per-cent. solution of formalin, and keeps them there until the alcohol is completely removed. This requires from half an hour to an hour. He then washes them well in water and makes frozen sections. The tissue, he states, is rendered soap-like in consistence by the action of the formalin.

Ohlmacher states that formalin, when used in from two- to four per-cent. solutions, acts as a powerful mordant for aniline dyes. Cover-glass preparations are treated for one minute with the solution, washed well in water, and then stained in the cold. Or it may be used instead of aniline oil or carbolic acid as a menstruum for dissolving the dyes. One gramme of fuchsine or other aniline dye is dissolved in ten cubic centimetres of alcohol, and this is added to one hundred cubic centimetres of a four-per-cent. solution of formalin. Formalin methylene blue, made by dissolving one gramme of methylene blue in one humdred cubic centimetres of a four-per-cent. solution of formalin, makes an effective stain. A saturated solution of safranin in a four-per-cent. solution of formalin gives a beautiful double stain when used after the formalin methylene blue. Nuclei stain blue, plasma stains reddish.

S. H. Gage has used the following solution as a dissociating agent with good results:

Normal salt solution..... 1,000 c. c.;
Formalin (forty per cent.)..... 2 "

Formalin has been used by Hauser for preserving plate and tube cultures of bacteria. His method is as follows: Plate cultures, in Peri's dishes, have a piece of filter paper placed under the cover, which has been moistened with ten to fifteen drops of formalin. The plates are then placed in

a closed vessel in the bottom of which is laid paper or cotton saturated with formalin. After twenty-four hours the cultures are fixed. Test-tube cultures are closed with a plug of cotton that has been wet with formalin and then placed in a closed chamber as above. After twenty-four hours they are removed and sealed with sealing wax, when a permanent preparation is obtained. Colonies from plate cultures may be permanently mounted by the following procedure: The selected colony is cut out of the plate and placed on a slide and covered, and then a little of the melted medium is run under the cover. The slide is then exposed to the action of the vapor of formalin for twelve hours. Formalin renders ordinary culture media, gelatin, and that fluidified by bacteria non-liquefiable by heat. The above-mentioned method of preserving bacteria has been employed successfully by Alleger, Cheesman, and many others. I am informed by Dr. Cheesman that cultures treated in this manner by him a year ago are still well preserved, but some of the chromogenic forms have lost their color to some extent.

Bibliography.

1. Alleger, W. W. Formalin in Bacteriology, with more Especial Reference to its Action on the Bacillus of Diphtheria. *Amer. Monthly Mic. Jour.*, April, 1894, p. 104.

2. Benda, C. Formalin beim Gefrierverfahren. *Centrlbl. f. allgm. Pathol. u. path. Anat.*, vi, 1895, p. 803.

3. Bergonzoli. La Formalina. *Boll. Nat. Coll.*, Anno 14, 1895.

4. Bergonzoli. Ancora sulla Formalina. *Boll. scientif.*, Anno 17, p. 26.

5. Blanchard. *Bull. de la Soc. de zool.*, xx, 1895, p. 93.

6. Blum, F. Der Formaldehyd als Härtungsmittel. *Zeitsch. f. wiss. Mikros.*, x, 1893, p. 314.

7. Blum, F. Notiz über die Anwendung des Formaldehyds (Formol) als Härtungs- und Conservirungsmittel. *Anat. Anz.*, ix, 1894, p. 229.

8. Blum, J. Formol als Conservirungssflüssigkeit. *Ber. d. Senckenburg. naturf. Gesell.*, Frankfurt, 1894.

9. Bolles-Lee. Formol or Formaldehyde? *Anat. Anz.*, xi, 1895, p. 255.

10. Born. Demonstration einer Anzahl in Formalin (Formol) gehärteter menschlicher Gehirne. *Schlesische Gesell. f. vaterlandische Kultur, med. Sektion*, März, 1894.

11. Burckhard. Disinfection Action of Formalin. *Jour. of the Royal. Mic. Soc.*, 1895, p. 705.

12. Cambier et Brochet. *Annal. de microgr.*, vii, 1895, p. 89.

13. Cassidy, J. S. Formal Aldehyde. *Ohio Dental Journal*, Toledo, v, 1895, p. 447.

14. Cohn, F. Use of Formal Aldehyde. *Jour. of the Royal Mic. Soc.*, 1894, p. 642, from *Jahrb. d. schles. Gesell. f. vaterl. Kultur*, 1893, p. 23.

15. Cullen, T. S. A Rapid Method of making Permanent Specimens from Frozen Sections by the Use of Formalin. *Bull. of the Johns Hopkins Hospital*, vi, 1895, p. 67.

16. Cullen, T. S. Beschleunigtes Verfahren zur Färbung frischer Gewebe mittelst Formalins. *Centrlbl. f. allg. Pathol. u. pathol. Anat.*, vi, 1895, p. 448.

17. Dell Isola. Sul valore della formalina in istologia e sul modo di usarla. *Boll. d. R. Acad. med. di. Genova*, v, 1895.

18. Durig. Das Formalin als Fixirungsmittel anstatt der Osmiumsäure bei der Methode Ramon y Cajal's. *Anat. Anz.*, x, 1895, p. 659.

19. Eccles. Formic Aldehyde as a Rapid Hardening Agent for Animal Tissues. *Brit. Medical Jour.*, 1894, p. 1124.

20. Ehlers. Mit Formal conservirte Fische und wirbellose Thiere. *Vhdlgn. d. dtsch. zool. Gesell.*, München, 1894, p. 92.

21. Fish, P. A. Formalin for the Preservation of Brains. *Jour. of Neurology*, v, 1895, p. 126.

22. Fish, P. A. The Use of Formalin in Neurology. *Proceed. of the Amer. Mic. Soc.*, xvii, 1895.

23. Gage, S. H. On the Use of Formalin as a Dissociating Medium. *Mic. Bull. and Scientific News*, xii, p. 4.

24. Hauser, G. Ueber Verwendung des Formalins zur Conservirung von Bacterienculturen. *Münch. med. Wochschr.*, 1893, No. 30, 35.

25. Hermann, F. Notiz über die Anwendung des Formalins (Formaldehyds) als Härtungs- und Conservirungsmittel. *Anat. Anz.*, ix, 1893, p. 112.

26. Hoyer, Jr. Ueber die Anwendung des Formaldehyds in der histologischen Technik. *Vhdlg. d. anat. Gesell.*, 8 Vis., Strassburg, 1894, p. 236.

27. Kenyon, F. C. *Amer. Naturalist*, xxix, 1895, p. 81.

28. Kitchel, E. M. Notes on the Fixation of Nerve Fibres by Formalin. *N. Y. Med. Jour.*, lxii, 1895, p. 65.

29. Koehler and Lumiere. New Use of Formic Aldehyde. *Jour. of the Royal Mic. Soc.*, 1895, p. 606, from *Bibliog. Anat.*, i, 1895. p. 35.

30. Lachi. La Formalina come mezzo di fissazione in sostituzione all' acido osmico nel metodo di Ramon y Cajal. *Anat. Anz.*, x, 1895, p. 790.

31. Lachi. Sul valore della formalina per usi de microscopia. *Monit. zool. ital.*, Anno v, 1895, p. 15.

32. Lanzillotti-Buonanti. Nuovo presso di conservazione dei centri nervosi. *Monit. zool. ital.*, v, 1895, p. 273.

33. Leber, Th. Ueber die Hartung von Augen in Formol. *Naturhist. med. Ver. Heidelberg, med. Sect.*, Sitz. v, 3. Juli, 1894.

34. Linsbauer, L. Einige Versuche über die conservirende Wirkung von Formol. *Sb. d. Zool.-bot. Gesell.*, Wien, xliv, 1894.

35. Lavdowsky. Von der Entstehung der chromatischen und achromatischen Substanz in der thierischen und planzlichen Zellen. *Anat. Hefte*, iv, 1894, p. 355.

36. Marie. Du formal comme réactif fixateur et durcissant des centres nerveux. *Soc. anat.*, Paris, 1894.

37. Marshall, C. D. Formol as a Hardening Reagent for the Eyes and other Tissues. *Trans. of the Ophthal. Soc. of the United Kingdom*, v, 1895, p. 229.

38. Ohlmacher, A. P. Formalin as a Mordant. *Medical News*, lxvi, 1895, p. 184.

39. Parker and Floyd. The Preservation of Mammalian Brains by Means of Formalin and Alcohol. *Anat. Anz.*, xi, 1895, p. 156.

40. Parker and Floyd. Formaldehyde, Formalin, Formol, and Formalose. *Anat. Anz.*, xi, 1896, p. 567.

41. Penzig. Formalin. *Jour. of the Royal Mic. Soc.*, 1895, p. 249.

42. Pilliet. Action du formol sur les tissus. *Comp. rend. de la Soc. de biol.*, 1895, p. 641.

43. Pottevin, M. H. *Ann. de l'Inst. Pasteur*, viii, 1894, p. 796.

44. Reimer, M. Ueber Formol als Fixirungsmittel. *Fortschr. d. Med.*, xii, 1894, p. 773.

45. Stebbins, J. H. Formaldehyde; its Chemistry and Preparation. *Amer. Annual of Photography and Photographic Times*, 1895, p. 259.

46. Steuer, A. Formol als Conservirungsflüssigkeit. *Mitt. d. Sect. f. Naturk. d. österr. Tourists Clubs*, 1895, p. 9.

47. Strong, O. S. The Use of Formalin in Golgi's Method. *Science*, N. S., i, 1895, p. 166.

48. Strong, O. S. On the Use of Formalin in Injecting Media. *Science*, N. S., iii, 1896, p. 213.

49. Van Gieson. Formalin. *Science*, N. S., i, 1895, p. 167.

50. Zacharias. Formol als Conservirungsflüssigkeit. *Forschungsberichte aus d. Biol. Stat. Plön*, iii, 1895, p. 209.

THE NASAL MUCOUS MEMBRANE.

A PLEA FOR THE GREATER CARE OF IT IN INTRANASAL OPERATIONS.

By EMIL MAYER, M. D.,

SURGEON TO THE NEW YORK EYE AND EAR INFIRMARY (THROAT DEPARTMENT); LARYNGOLOGIST TO THE NEW YORK RED CROSS; LECTURER ON LARYNGOLOGY TO THE NEW YORK POLYCLINIC; FELLOW OF THE AMERICAN LARYNGOLOGICAL ASSOCIATION, THE NEW YORK ACADEMY OF MEDICINE, ETC.

In its normal condition the nasal mucous membrane is of vast importance to the economy in its physiological functions. Besides its part in respiration and in olfaction is the important one of preventing ingress into the system of pathogenic micro-organisms. Its exposed condition and sensitive character render it especially subject to infectious disorders, and hence, after repeated attacks of these micro-organisms, the protecting power of the membrane succumbs and a diseased state results.

That the nature of the normal mucous membrane may be considered, I have here briefly outlined its anatomy.

The pituitary or Schneiderian membrane varies in thickness and vascularity in different parts. It is thickest and most vascular over the turbinate bones, particularly the inferior, and on the sæptum nasi it is also very thick and spongy; but in the intervals between the turbinate bones and over the floor of the nasal fossæ it is considerably thinner. In the maxillary, frontal, and sphenoidal sinuses and in the ethmoidal cells the lining mucous membrane is very thin and pale. In the region of the external nostrils the lining membrane is stratified squamous epithelium, in the upper or olfactory region it is non-ciliated and columnar, and in the lower or respiratory region and in the sinuses it is ciliated and columnar. The membrane in the respiratory part covers the middle and inferior turbinals and the lower portion of the fossæ, and is studded with racemose glands which open by orifices apparent on the surface. Besides the glands the mucous membrane of the fossæ contains a variable amount of lymphoid tissue, occasionally accumulated into nodules. In some parts large venous plexuses are found encircled, as well as the alveoli of the glands among which they lie, by bundles of plain muscular fibres (Klein), thus forming a sort of cavernous tissue.

The olfactory region includes the superior turbinal and corresponding part of the sæptum. It is extremely vascular, a close plexus of large capillary vessels being found under the lining membrane throughout its whole extent. Its mucous membrane, of the non-ciliated variety of epithelium, is soft and pulpy and delicate in consistence. It has a distinct yellow color. The numerous glands of Bowman in this region open by fine ducts lined with flattened cells, which extend to the surface between the olfactory epithelium cells. In the mucous membrane itself the gland tube is somewhat convoluted and enlarged, and it may have one or two branches. It is limited throughout by a basement membrane, and lined and almost filled with columnar or polyedral secreting cells of a serous type. The gland cells contain yellowish-brown pigment. The gland ducts open occasionally into a ciliated crypt, but more frequently into a small subepithelial receptacle lined with flattened epithelium, from which a fine tube passes to the surface between the epithelium cells. The olfactory cells have a central process, prolonged as an ordinary nerve fibril, a body or cell with nucleus; above that a peripheral process, terminating in a knoblike prominence in which are the olfactory hairs. The fine varicose central processes of these cells are directly continuous with the fibres of the olfactory nerve, and terminate centrally by dendritic ramifications in the glomeruli of the olfactory bulb.

Blood-vessels.—The descending palatine branch of the maxillary artery gives small offsets to the hinder part of the inferior turbinal and meatus. The anterior ethmoidal branch of the ophthalmic artery enters the cavity with the nasal nerves, and is distributed to the mucous membrane of the fore part of the sæptum and outer wall. The posterior ethmoidal branch of the ophthalmic artery sends small twigs to the posterior ethmoidal cells, to the roof, and to the upper part of the sæptum. A branch from the superior coronary of the facial and the lateral nasal artery supply the part near the anterior nares. The several arteries anastomose freely together in the mucous membrane, and are distributed to three sets of capillaries—a periosteal, glandular, and subepithelial.

The veins form a dense plexus in the mucous membrane, those in the deeper parts being especially large and closely arranged, so as almost to approach the structure of a cavernous tissue. This is most largely developed over the whole lower turbinal, the lower and hinder border of the middle turbinal, and the hinder end of the upper turbinal, as well as on the lower and hinder part of the sæptum. A similar dense venous plexus, continuous with that of the nasal fossæ, extends around the nasal duct as far upward as the lacrymal sac; the trunks leaving the cavity accompanying the arteries, the spheno-palatine vein emptying itself into the pterygoid plexus; the ethmoidal veins joining the ophthalmic vein and the veins of the dura mater, and also sending a branch to join the veins of the orbital part of the frontal lobe of the brain, and small veins passing out at the margin of the nares to join the venous plexus of the upper lip. Some small veins also pierce the nasal bones and the ascending process of the superior maxilla to join the commencement of the facial vein.

The lymphatics are abundant and large. They form a close plexus in the mucous membrane, the branches extending almost to the surface, and a more open plexus of valved vessels near the bone. These are in communication with the lymphatic spaces which inclose the branches of the olfactory nerve, and these spaces again communicate with the subdural and subarachnoid spaces of the cranium, so that the lymphatics of the nasal mucous membrane can be in-

jected from the cranial cavity. Lymphatic nodules are here and there present in the mucous membrane.

It will thus be seen that we have here an intensely vascular and large surface richly endowed with nerve fibres, each normally performing its function.

By far the most frequent abnormities in the anterior nares that rhinologists are called upon to treat are the diseased conditions of an obstructive nature, and their aim must be to remove these in order to procure free access of air into the posterior nares.

For this purpose various mechanical devices have been used, and it is in the selection of these that much care should be taken in order that the least injury possible to the mucous membrane shall occur, for it has been shown how necessary that membrane is to the economy, and if the removal of any portion of membrane may be avoided it should certainly be done.

That the removal of healthy mucous membrane is often followed by very disagreeable results can not be gainsaid. The very titles of papers presented at the gatherings of rhinologists prove this. The title of a recent paper is The Treatment of Post-operative Ulcers of the Sæptum; that of another, Neurasthenia resulting from Intranasal Operations, etc. Ulcers, bleeding, localized pain, all proceed from the denudation of the membrane.

It would be of interest to note how many of these conditions followed the use of the saw, electric burr, or plane, as these instruments are, in my opinion, the greatest destroyers of healthy membrane.

We can do so well with other means than these mentioned that it seems to me, except for such absolute obstructions as require opening (as in diseases of the accessory sinuses), that the electric burr should be discarded altogether. The electric saw, plane, or shaver are horrible devices, and can work an enormous amount of mischief.

The galvano-cautery is at best a mere temporizing device, rarely curing anything, but chiefly destroying the mucous membrane and thus rendering it powerless for its chief physiological functions. This applies mainly to all conditions about the sæptum. Where the mucous membrane itself is already diseased and redundant, as over the turbinates, the use of the galvano-cautery is of some value.

Admitting, then, that operative procedures are necessary in a given case, and due regard is to be had of the mucous membrane, the question arises, "How shall we operate?"

In all ecchondroses of the sæptum near the alæ it has been my custom to operate as follows: The parts are well cleansed with a spray, an anæsthetic given (either local or general), and an "L" incision is made in the mucous membrane. The membrane is then seized with the forceps, and with a blunt knife is raised from the cartilage. It peels readily. With a knife the cartilage is excised, the flap of membrane is brought down to its original position, two sutures are introduced, and the wound lightly packed with iodoform gauze. In four cases that I operated in this manner I first inserted a plug of iodoform gauze posterior to the obstruction in the nares, thus preventing the flow of blood into the pharynx. Anæsthesia was general. The bleeding was free, but the field was never obscured, as frequent use of cotton swabs kept it clear and the head was kept dependent. No vessels of any size were encountered, and the hæmorrhage ceased when the mucous membrane was sutured in place. The recovery was complete in each case, and there were no post-operative symptoms whatever.

For cartilaginous obstructions other than deviations, the electric trephine has served me best. By introducing the instrument at the point of greatest thickening, it is comparatively easy for the operator to remove the offending cartilage under the mucous membrane. In this manner the flap of membrane is allowed to reunite, which it readily does.

The only instance where the removal of the mucous membrane is not apt to be followed by distressing symptoms is where it is redundant, as over the turbinated bodies, and here the same procedure may be followed as in other mucous membranes. The cold wire snare has proved the most efficacious in my hands. The hypertrophied membrane having been removed, it is imperatively necessary to pack the nostril with iodoform gauze. This renders the wound aseptic, stimulates healing, and checks hæmorrhage. It may be said that the dissecting operation performed for the removal of ecchondroses is too great for the slight nature of the difficulty. To this I would reply that anything requiring removal should be done in the most thorough manner possible, with a view to the least possible evil after-effects. This applies only to ecchondroses of a fairly large size, not to slight spurs, etc. The nasal mucous membrane is of so much need in the economy that every care should be taken of it, and no labor should be too great to achieve the best practical and scientific results.

25 East Seventy-seventh Street.

THE TREATMENT OF ABSCESS BY THE OTIS METHOD,

WITH A REPORT OF THIRTY-TWO CASES.

By EDWIN M. HASBROUCK, M.D.,
WASHINGTON, D. C.

The treatment of abscess has always been an exceedingly unsatisfactory one to the surgeon as well as to the patient, both from the length of time these cases run, the pain attending the usual methods of treatment, with the subsequent redressings, and that in the large majority of cases a prolonged period of disability follows the primary operation, a factor by no means to be despised when considered in connection with the working classes, among whom most of these cases are seen, and with whom each day deducted from labor means a corresponding loss of means of living.

Some two years ago Dr. W. K. Otis, of New York, in his work in genito-urinary surgery, recommended a method of treating suppurative inguinal adenitis, an account of which appeared in the *Journal of Cutaneous and Genito urinary Diseases* for 1893, vol. xi, pp. 174–176, under the title

The Treatment of Suppurating Buboes by the Injection of Iodoform Ointment. The following paragraph extracted from that paper contains the line of treatment, and is the precise method followed in each of the cases here reported:

"The skin for some eight or ten inches about the affected area was rendered thoroughly aseptic by scrubbing with green soap, washed with sulphuric ether and then with bichloride (1 to 1,000). A narrow bistoury was then inserted into the abscess cavity, and the contents gently but thoroughly squeezed out, the cavity irrigated with bichloride (1 to 1,000), and immediately filled to moderate distention with warm iodoform ointment (ten per cent. iodoform and vaseline), care being taken not to use a sufficient degree of heat to liberate free iodine. The syringe used for introducing the ointment was the ordinary cone-pointed, glass, clap syringe. The plunger being removed, the barrel was warmed in the flame of an alcohol lamp, filled with ointment by means of a spatula, and on finishing the injection, at the instant of withdrawing the syringe from the wound, a compress wet with cold bichloride solution was applied, which instantly solidified the ointment at the orifice, preventing the escape of that in the abscess cavity. A large compress of sterilized gauze was then applied by means of a firm spica, the patient told to return in four days, when if all was well the dressing was reapplied, but if any evidence of inflammatory action was found, the wound was thoroughly irrigated and cleansed, and the injection repeated."

Out of sixteen cases thus treated, Otis reports nine cured in six days, three in twelve days, one in fourteen days, one in twenty three days, and two deserted.

The following advantages are claimed for this method:

"1. That it is simple and safe.

"2. In suitable cases cure, as a rule, seems more rapid than by any other method.

"3. The patient is not prevented from going about during treatment (and I might add, and attending to his customary duties).

"4. The first gland being rendered thoroughly aseptic, renders it less likely that other glands in the chain will become infected (?).

"5. *It leaves no telltale scar.*

"6. It in no way interferes with any subsequent surgical procedure, should such be deemed advisable."

At that time I was associated with Dr. R. D. Boss as his student assistant on the genito-urinary service of Dr. Kerr, at the Emergency Hospital of this city, under whose direction this treatment was carried out. Hitherto the old method of treatment by open incision, curretting, irrigating, and packing with gauze was the one most generally used, while excision of the entire gland was also employed to some extent.

The suffering caused by either of these latter methods, the inability to perform any labor for a prolonged period, and the many weeks of convalescence, made the patient's life a burden to him, and the majority of the cases an eyesore to ourselves. It was therefore with considerable anticipation that this new method, advanced by so eminent an authority, was adopted, and the first operation performed by us on the lines laid down by its author, of which the following is an account:

Case I.—Benjamin F. came to the hospital November 25, 1893, with an enlargement of the left inguinal glands, following the appearance of a chancre; very tender on pressure; intense pain on locomotion. Treatment, November 25th, as just quoted from the paper by Otis. December 2d, some suppuration found to exist; cavity reopened, irrigated, and reinjected. December 9th, same condition existed and treatment repeated. December 12th, the cavity had almost entirely healed, and a dry sterilized dressing was applied. December 16th, discharged, cured.

It should be stated that on the day following the primary operation the patient was able to resume his work, at which he continued up to the day of his discharge.

Here, then, we have a case cured just twenty-one days after the primary operation, with two repetitions of treatment; but it must be remembered that this was our first experience with a new method, and the results far in advance of those obtained by the old, in which cases frequently ran five and six weeks and often longer.

Following the first attempt, a series of fifty cases was operated upon by this method. Of these, some did not return after the operation, others returned once or twice, while still others discharged themselves when almost well, and of all such none are included in the present paper. Nineteen cases remain, however, where the entire course of events is known from start to finish, and from the results it is fair to suppose that the majority of the patients who failed to put in a second appearance, etc., were cured.

In the following list all histories are omitted; the character of the bubo is given so far as known; the date of primary operation; secondary operation, if any; and the number of days taken to effect a cure:

Case II.—William P. Bubo: bilateral. April 18th, operated on one. April 21st, operated on the other. April 29th, reinjected the second. May 3d, discharged. One injection in the first; two in the second; time, fifteen days.

Case III.—William H. Bubo: bilateral. April 18th, operated on both. April 29th, left one well; right reinjected. May 11th, discharged. One injection in left; two in right; time, twenty-three days.

Case IV.—Lewis B. Bubo: single. April 7th, operated. April 18th, reinjected. April 29th, reinjected. May 3d, discharged. Three injections; time, twenty-six days.

Case V.—William H. Bubo: gonorrhœal. April 3d, operated. April 11th, discharged. One injection; time, eight days.

Case VI.—R. J. Bubo: specific; bilateral. March 18th, operated. April 21st, discharged. One injection; time, thirty-four days.

Case VII.—Samuel C. Bubo: gonorrhœal. February 10th, operated. February 17th, discharged. One injection; time, seven days.

Case VIII.—Major W. February 3d, operated. February 10th, discharged. One injection; time, seven days.

Case IX.—Walter M. May 4th, operated. May 15th, discharged. One injection; time, eleven days.

Case X.—Charles I. Bubo: chancroidal. January 3d, operated. January 9th, discharged. One injection; time, six days.

Case XI.—Edward P. Bubo: chancroidal. December 30th, operated. January 3d, discharged. One injection; time, four days.

Case XII.—Benjamin W. Bubo: gonorrhœal. December 30th, operated. January 3d, reinjected. January 9th, discharged. Two injections; time, ten days.

Case XIII.—Frank S. Bubo: specific. December 27th. operated. January 3d, discharged. One injection; time, seven days.

Case XIV.—James H. Bubo: chancroidal. December 27th, operated. January 9th, discharged. One injection; time, thirteen days.

Case XV.—John C. January 6th, operated. Returned for inspection on January 10th, 16th, and 20th, and doing well. January 29th, gland inflamed and suppurating; reinjected. February 24th, discharged. Two injections; time, forty-nine days, showing that, even with the best of treatment, things will occasionally go wrong.

Case XVI.—Walter M. May 5th, operated. May 16th, discharged. One injection; time, eleven days.

Case XVII.—Joseph I. January 29th, operated. February 28th, discharged. One injection; time, thirty days.

Case XVIII.—Fred. D. Bubo: gonorrhœal. April 21st, operated. May 7th, discharged. One injection; time, sixteen days.

Case XIX.—Henry T. Bubo: specific. December 9th, operated. December 16th, discharged. One injection. Time, seven days.

Here, then, we have a series of nineteen buboes treated by the new method with an average period of convalescence of sixteen days—a maximum of forty-nine days and a minimum of four. Of these, six were discharged within a week, five within two weeks, three within three weeks, four within four weeks, and the one extraordinary case which took seven weeks. Or, to make it more comprehensive, out of nineteen cases fourteen were discharged within three weeks.

Stimulated by the success obtained upon abscesses of this type, Dr. Kerr has since directed the trial of the method upon abscesses of other types, and the results excel even those of the genito-urinary service.

Three cases serve as good examples of the results in abscess of a tubercular character.

Case I.—Jennie T. appeared at the clinic on April 25th with tuberculous cervical adenitis, broken down and suppurating. The Otis method was used, with every possible precaution to obtain thorough cleanliness of the abscess cavity. It was reinjected on May 15th, 29th, and June 5th, and on June 22d she was discharged. Four injections were used, and the time occupied was fifty-eight days—practically two months.

Case II.—Mr. P. appeared at the hospital on May 3d with tuberculous cervical adenitis, broken down and suppurating, and was treated by the Otis method; reinjected on June 2d, and discharged on June 18th. Two injections were used; time, eighteen days.

Case III.—Alice S., a rickety child with two tuberculous abscesses, each of the size of a hen's egg, one on the back of the neck, the other over the biceps on the left arm. Both were operated upon on November 5th. The one on the neck contained about an ounce of a thin, creamy pus; the one on the arm contained the same, together with considerable caseous matter. November 9th, both much reduced in size, particularly the one on the neck. The one on the arm was reinjected, the ointment having been removed by an accident of my own. November 13th, abscess on the neck almost well. The one on the arm much reduced in size and improved in appearance. Dry dressings applied. November 20th, abscess on the neck practically well. Abscess on the arm opened and a small amount of pus obtained. Cavity thoroughly cleansed and reinjected. November 25th, arm almost well, with wound healed. December 2d, neck absolutely well; arm suppurating again. Evacuated, thoroughly irrigated, and reinjected. December 6th, discharged. One injection in the neck, four in the arm. Time, thirty-one days.

The results obtained in the simpler abscesses are equally gratifying if not astonishing. Of furunculosis I have records of two cases.

Case I.—William G. May 18th, operated. May 25th, discharged. One injection. Time, seven days.

Case II.—William A. November 25th, operated. November 30th, discharged. One injection. Time, five days.

While in simple abscess of phlegmonous nature I have to report eight cases, both from hospital and private practice, as follows:

Case I.—Charles C. Phlegmon on dorsum of hand between thumb and first finger, with decided abscess cavity extending well down into substance of adductor pollicis muscle. Operated November 14th. Returned for inspection, November 16th. Hand nearly normal in size and appearance. No pain or tenderness. Discharged, November 20th. One injection. Time, six days.

Case II.—Jane S. Axillary abscess. November 7th, operated. November 13th, discharged. One injection. Time, six days.

Case III. Effie B. Axillary abscess. October 29th, operated. November 4th, discharged. One injection. Time, six days.

Case IV.—Dorothy B. Phlegmon of little finger with decided abscess cavity. October 22d, operated. October 30th, discharged. One injection. Time, eight days.

Case V.—Henry S. Abscess on upper lip, overhanging the lower lip nearly an inch. October 22d, operated. October 26th, discharged. One injection. Time, four days.

Case VI.—S. P., scrotal abscess. June 19th, operated. June 21st, reinjected. June 23d, discharged. Two injections; time, four days.

Case VII.—H. K., submaxillary abscess of the size of a hen's egg. This case was kindly reported to me by Dr. P. M. Smith, of the Emergency Hospital, being one operated upon by himself. November 26th, operated. November 29th, reinjected. December 2d, discharged. Two injections; time, seven days.

Case VIII.—Mrs. F. lived eighteen miles away, at Great Falls, where I attended her once a week for ulcer of the leg, which I treated by strapping. On my last visit, when I expected to discharge her, I found that the straps had in some manner chafed the flesh, causing a small abscess with a cavity the diameter of a lead pencil, which had burrowed downward toward the malleolus for about two inches. I was totally unprepared for anything of the sort, and, not wishing to return again for so trivial a thing, I told her to get a syringe, vaseline, and iodoform at the Falls; mix one half teaspoonful of iodoform with four teaspoonfuls of vaseline, and, after cleansing the wound thoroughly with water that had been boiled, to fill the cavity with the ointment, and bandage. A letter received subsequently informs me that she did as directed and soon got well.

Leaving out this last, we have, then, of the simple abscesses, nine treated by the Otis method, with an average period of convalescence of six days—a maximum of eight days and a minimum of four days.

To conclude: 1. My experience with this method demonstrates that it is available only in those cases of infection by the staphylococcus where there is an appreciable pus cavity, and thus a storage place for the ointment until absorption can take place, as in all cases of streptococcus infection—diffuse phlegmons, where no pus cavity existed—the method was found to be absolutely useless.

2. Particularly do I wish to call attention to the fact that by this method patients are able to resume their duties without any discomfort on the day following that of operation, and that, if secondary suppuration does occur, the inconvenience is slight compared to that at first.

3. Two cardinal points are to be observed, without which there is good chance of failure: (*a*) Absolute cleansing of the cavity of all traces of pus, and (*b*) the injection of ointment into it in quantity barely sufficient to produce moderate distention.

This is certainly an improved method of treating certain abscesses, the results being far in advance of those obtained by any other that I am familiar with, and requires but a careful trial to commend itself to any one. I am anxious to see it tried on mammary and ischiorectal abscesses, in both of which, if successful, it will be of almost inestimable value.

SOME POINTS IN THE CONTROL OF EPILEPSY BY BROMIDES.*

By LOUIS FAUGÈRES BISHOP, A. M., M. D.,
EX-HOUSE PHYSICIAN, ST. LUKE'S HOSPITAL;
ASSISTANT TO THE DEPARTMENT OF NERVOUS DISEASES, VANDERBILT CLINIC, NEW YORK.

In these days, when so many new and fantastic plans of treatment are urged upon the attention of all medical and lay people, it is occasionally the duty of those in a position to form some judgment of the comparative value of different methods to assist an existing method to hold its ground until a better one proves itself worthy. The details of these so-called new cures for epilepsy, which are so impertinently urged on the attention of every one, it is not necessary to describe. Our task at the present moment is not to urge a new truth, but to give a little necessary support to an old one. An estimation of the value of any treatment in a chronic periodic disease is a task that may well test the judgment of an enthusiastic experimenter in therapeutics.

In all medicine there is hardly any treatment so universally accepted by competent observers as the bromide treatment of epilepsy. So well established is this that our attention is often diverted from the fact that to carry out the details of a treatment which from the nature of the disease must be continued for years is not an easy matter. It would be well, therefore, in every case to be sure that our treatment has been carried out in the best possible manner, rather than to become soon discouraged and rush to other methods. In a small minority of cases, unfortunately, we are compelled to soon abandon the intent to use bromide. Our problem resolves itself into this: to give, within reasonable limits, a sufficient quantity of bromide to bring about a cessation of the attacks, to so care for the digestive system that this amount of bromide can be borne, and to carry out such measures as will tend to promote the general well-being of the patient. These propositions are simple; their accomplishment is sometimes extremely difficult. Until in every particular case it is proved otherwise, the bromide of potassium offers the most easily managed means of administering bromide. The best and easiest results will be obtained by administering this drug in three equally divided doses after meals; occasionally a dose at bedtime may be indicated. The drug is best given by itself in an aqueous solution, and the adjuvants and correctives given separately. The reason for doing that is this: the success of the case will depend upon a proper regulation of the dosage and the faithfulness of the patient for carrying it out. Just as in sailing a ship across the ocean the rudder can not be fixed in one position, but must be constantly shifted to keep the ship in its course in spite of squalls and adverse currents, so the dose of bromide must be altered as often as necessary to meet the needs of the patient. There is one thing that helps enormously in the successful treatment of a case of epilepsy, and that is to keep the bromide in your own hands, and give it to the patient as required. In no other way can you regulate the doses accurately and be sure that what you have ordered has been taken. When you have a case of epilepsy, order for your patient a large bottle of a one-to-four solution of bromide of potassium, and a smaller empty bottle labeled "Two teaspoonfuls after meals three times daily." Now hand your patient a four-ounce graduate and a spoon such as he expects to use, and tell him to measure out teaspoonfuls until he has reached four ounces. In this way you ascertain how many doses which to the ounce he is going to get of his medicine; on this basis mark on the outside of his bottle the number of doses according to his system of measuring it contains. Having determined upon the dose you wish to administer by a simple calculation, you put enough of the bromide solution into the labeled bottle, and fill the bottle with water. At the patient's next visit it is a simple matter to know just how much he has actually taken, or to detect a neglect of doses. At this time you make up your mind as to every variation in the administration, and, by changing the proportion of the solution, it is made without any interference with the routine on the part of the patient and of the formulation of the habit of taking the medicine at the proper time, which alone will insure its faithful fulfillment during a long period of time. In this way the administration of bromide of potassium in accurate quantities becomes a simple matter. In one instance the variation in the average dose was reduced to one tenth of a grain. We will not discuss at this time the question of adjuvants and correctives more than to insist upon a practical advantage of keeping them separated from the bromide. If the great

* Read before the Neurological Section of the New York Academy of Medicine, May 22, 1896.

flagship of our therapeutical squadron must be steered, how much more is this true of all the little vessels! It is seldom possible to give an efficient quantity of bromide for a sufficient length of time without constantly watching and caring for the alimentary canal. A serious disadvantage of all the common epilepsy mixtures is that their different ingredients can not be varied immediately unless you wish to throw away a large quantity of medicine and write entirely new prescriptions. In a long course of treatment, if this is done, the question of expense is a very serious one to many patients; therefore, it is better to keep our drugs separate as much as possible, and avoid mortgaging ourselves to any particular combination until a certain bottle may have been used up. What can be accomplished by the patient adaptation of bromide to cases in which the bromide has failed when given without sufficient attention is illustrated by the two following cases, both of which had been previously treated for a considerable length of time:

Case I.—A lad, aged nineteen years, apprentice. Family history: Father died of pneumonia; three sisters and two brothers healthy; asphyxiated at birth; at two years of age had convulsions, supposed to be due to teething; no history of scarlet fever, diphtheria, rheumatism, or any severe illness; four years ago, without warning, had a typical epileptic seizure; convulsions are general from the first; during the first year had attacks about every fifteen days; one attack was apt to be followed by another in two or three days; the attacks have always occurred in the daytime so far as known. Often there is a distinct aura which can be recognized by his family. For two days before his attacks he is either depressed or elated. Physical examination negative. He is said when younger to have had various forms of habit chorea. The attacks had continued about the same in frequency in spite of a great deal of unsystematic treatment. The cause of the failure of the bromide to act previously was discovered to have been that he not only measured a very small quantity of medicine when taking a teaspoonful, but at times acknowledged to have neglected it entirely. By knowing exactly how long his medicine should last, it was an easy matter to persuade him that the fault for the failure of treatment was his own. The subsequent notes on this case show that during the first four months the patient allowed his medicine to be carefully supervised, and escaped without convulsions; then he had two convulsions. An investigation showed that he had through carelessness reduced his dose of bromide below what had been ordered. During the subsequent two months there was no attack; then he again neglected his medicine and had a convulsion. By this time it was possible to convince this patient that successful treatment depended upon absolute faithfulness upon his part. He was instructed to return every two weeks, at which time the dose of bromide and the administration of correctives was to be adjusted; for the following year the patient was faithful in taking his bromide and escaped without an attack.

Case II.—A woman, aged thirty-five, housewife. Her father and mother died of pulmonary diseases; no family history of epilepsy; childhood healthy; menstruation began at fifteen, normal; at this age she had an attack of malarial fever. Though never robust, she had never had any other severe illness. Married at seventeen; has had four children and three miscarriages; her youngest child is eleven years old. She has not menstruated for the past fourteen months. Thirteen years ago, three months and a half before her confinement, states that she was much frightened by seeing her sister's child in a convulsion. Her confinement was normal. On the ninth day after confinement she had an epileptic seizure of mild character; six months later she had another. The attacks have continued at intervals in spite of unsystematic treatment, so that during the past year she has had about one series of attacks a month. An attack is usually followed by another on the following day. The aura consists in a feeling of nervousness, during which she drops things, etc. When she has this feeling, as a rule, she stays in bed, but the attack comes suddenly without further warning. For the past six months she has had severe headaches, especially after attacks. Physical examination shows heart, lungs, liver, and spleen normal; patient well nourished, but anæmic; the eyes are negative as examined by the ophthalmoscope. The necessity of a systematic and long course of bromide was explained to this patient. It was a little difficult to get her to consent, because she had been told that bromide destroyed the mind. No attempt was made to conceal from her the fact that the taking of bromide was an evil, but she was easily persuaded that the recurrence of the convulsions was doing her a great deal of harm. This patient was faithful in taking her medicine. Three weeks after beginning treatment she had a slight convulsion. The dose of bromide was increased, but three weeks later she had another. The bromide was again increased, and treatment of her stomach was instituted. During the next month she had two attacks. Her bromide was once more increased, so that she was taking twenty-five grains three times in twenty-four hours. Now there occurred something entirely new in her experience. She had an attack of *petit mal*. During the subsequent year the notes on this case showed constant adjustments of the dose of bromide, and constant and varied constitutional treatment directed especially to the alimentary canal, but during this year there was no recurrence of the epilepsy. Her mental condition, instead of being injured by the bromide, has improved in the absence of convulsions.

These are typical cases of epilepsy successfully treated with bromide after bromide had failed, but the fact must be emphasized that, though the bromide was essential to success, still just as necessary was the minute attention to the details of its administration. Epilepsy is a disease which might well be treated by the family physician instead of by a specialist; but few men without special training seem to have the courage to give bromide in sufficient quantities for a sufficient length of time. The treatment of epilepsy in our public clinics frequently fails because our attention is so much concentrated upon the specific treatment that the minute details necessary for the proper care of the alimentary canal, such as would appeal strongly to the mind of the patient's family doctor, are not properly carried out. What is meant to be emphasized is that before we condemn the bromide treatment as a failure in any particular case we must be sure that the bromide has been systematically taken in the amounts that we have planned, and that we have not failed in the all-important and difficult task of caring for the patient's general hygienic condition during the course of treatment.

30 West Thirty-sixth Street.

Change of Address.—Dr. B. Morjé, to No. 116 East Seventy-third Street, New York.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. APPLETON & Co.
Edited by FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, JUNE 13, 1896.

PATHOGNOMONIC SIGNS OF CONGENITAL SYPHILIS.

DR. SILEX recently read a paper on this subject before the Berlin Medical Society, and a discussion of it, which took place at the meeting of February 5th, is reported in the *Wiener klinische Rundschau* for May 24th. Dr. Busch held that the Hutchinsonian teeth, while they were typically eroded teeth, could not of themselves alone establish a diagnosis of congenital syphilis. The type consisted in irregularity of that part of the crown that was formed first, while the portion formed later showed the normal configuration. The typical erosion always affected the teeth that were developed earliest in the depths of the jaw, most commonly the first molars and the incisors.

Dr. Blaschko considered the presence of radiating cicatrices of the lips, described by Silex, as pathognomonic of congenital syphilis; but they must be actual cicatrices, and not puckerings due to muscular action. They often appeared as white lines on the red border of the lip; in that case they could be nothing else than cicatricial, and that was a sufficient indication that elsewhere they were cicatricial also. He had observed the true Hutchinsonian teeth only in patients in whom hereditary syphilis could be diagnosticated by other objective signs or by the history. He did not look upon parenchymatous keratitis as an absolutely sure sign of congenital syphilis; although it depended on syphilis in the great majority of cases, there were occasional instances in which it had a different ætiology. As an example, he mentioned the case of a girl, eighteen years old, who had suffered since her twelfth year of age with severe attacks of hæmorrhagic urticaria, in whom at length parenchymatous keratitis suddenly appeared, first in one eye and very soon in the other. The obvious conjecture that the ocular trouble was analogous to the skin disease, that the case was one of urticaria of the cornea, was confirmed in the course of a few days by the occurrence of a hæmorrhage at the edge of the cornea.

Dr. Lewin did not think that deformities of the teeth were by any means an absolutely sure criterion of congenital syphilis, although they were at all events a valuable sign demanding investigation for further symptoms. Even linear scars about the mouth were not a positive proof; he agreed with Silex that these apparent scars might be folds into which the skin was thrown by muscular action in consequence of defective development of the subcutaneous fat. On the other hand, he spoke of the great diagnostic value of a sign first brought forward by Virchow, a smooth, atrophic state of the base of the tongue which was easily to be made out by inspection with a mirror and by digital palpation.

Dr. Hirschberg said that in his experience, which included far more than a thousand cases of congenital syphilis, the characteristic Hutchinsonian teeth had been observed in about twelve per cent. of the cases; however, he had never found this formation of the teeth in a person who was not affected with congenital syphilis. Syphilitic keratitis, he said, was in no wise to be confounded with scrofulous keratitis; the one attacked the peculiar substance of the cornea, while the other was only superficial. The cicatrices, too, could readily be distinguished; while the blood-vessels of a scrofulous corneal cicatrix were continuous with those of the conjunctiva, the vessels in the opacity left by syphilitic keratitis proceeded to the deep marginal loops.

Dr. Köbner mentioned certain signs which he thought had not been sufficiently treated of in the discussion, but which were characteristic of congenital syphilis. One of them was syphilis cutanea nodosa conferta. In that manifestation of syphilis there was gummatous infiltration of the skin, and, contrary to what was true of acquired gummata of the skin, the lesions were almost always symmetrical. They were most commonly situated on the things and on the buttocks, in the form of large, dusky-red patches that spread in a serpiginous manner. Data were generally to be found also in the osseous system, such as hyperostoses of the skull and ossifying periostitis of the long bones, especially the tibia. Finally, he would mention ulcers and perforations in the throat and in the cavity of the mouth. In spite of everything, however, it was often very difficult to decide whether the disease was congenital or had been acquired in early infancy.

MINOR PARAGRAPHS.

THE INFLUENCE OF INFLUENZA ON THE SEXUAL APPARATUS IN WOMEN.

FURTHER observations on this subject by Dr. R. Müller, published in the *Münchener medicinische Wochenschrift* for 1895, No. 41, and summarized in the *Centralblatt für innere Medicin* for May 23, 1896, relate to a hundred and fifty-nine women who were affected with influenza in the periods 1889 to 1890 and 1894 to 1895. Twenty-one of them were pregnant, and pregnancy was interrupted in seventeen. In all but three of the hundred and thirty-eight who were not pregnant the genital organs were affected with either metrorrhagia, menorrhagia, or aggravation of sexual diseases already existing. The hæmorrhagic endometritis which is caused by influenza may under unfavorable circumstances pass into the chronic form, says Dr. Müller. He recommends irrigation of the vagina with a disinfectant several times a day as a prophylactic during the prevalence of influenza.

NUTROSE AND HYGIAMA.

THESE two nutritious preparations have been made the subject of an experimental study by Dr. R. Stüwe, an assistant physician of the municipal hospital in Frankfort on the Main (*Berliner klinische Wochenschrift*, 1896, No. 20; *Deutsche*

Medizinal-Zeitung, May 21, 1896). Nutrose is another name for a compound of casein and sodium concerning which there is already some literature. Stüwe has found it of particular value in the case of children recovering from scarlet fever, measles, diphtheria, or pneumonia. Added to a milk or soup diet, it enriches the food in albumin, and thus hastens recovery. Its taste is agreeable, and it is utterly unirritating to the intestines, from which it is readily absorbed. Hygiama is a powder easily dissolved in hot water. Cooked either with water or with milk, it makes a very pleasant and nutritious drink. In appearance and in taste it is suggestive of cocoa. It is made of condensed milk with the addition of certain cereals specially prepared and of cocoa deprived of its fat. It contains 20·4 per cent. of albuminous matter, 10 per cent. of fat, and 63·4 per cent. of carbohydrates. According to von Noorden, it is particularly useful in diseases of the stomach and intestines, in pulmonary consumption, in the debility of convalescence, in typhoid fever, and in weakly children.

GREEK AT THE ACADEMY.

The proceedings that took place on Friday evening of last week in Hosack Hall, in the Academy of Medicine's building, were remarkable. As is set forth in the contributed account which we publish elsewhere in this issue, they were largely of a festal nature, calculated, we must infer, to give an impetus to Dr. Rose's efforts to move the profession to adopt the Greek language for use on such occasions as those of international medical congresses. Enthusiasm roused by display as an accessory has helped along many a good cause that would otherwise have languished indefinitely; hence there was nothing out of place in the music, the Greek costumes, the flowers, and the little girl's recitals. It was not a meeting of the Academy of Medicine or of any medical organization, but simply a gathering of men and women by Dr. Rose's invitation. There was a fair proportion of physicians present, and the place of meeting lent a medical air to the proceedings, to say nothing of the facts that Dr. Rose is a practising physician and that his undertaking is specifically in the interest of precision in the language of medicine. If the Greek language is destined to come into use as the medium of scientific communications—and nobody can be sure that it is not—a prime prerequisite undoubtedly is its correct and uniform pronunciation, and to promote the general adoption of such a pronunciation, that of the Greeks of the present day and that now taught at Princeton, was the immediate object that Dr. Rose had in view when he arranged for the meeting. We heartily congratulate Dr. Rose on the good impression that was made on the assembly.

X RAYS IN MEDICINE.

Röntgen pictures continue to be of interest in connection with medicine. One of the most serviceable of them that we have seen is reproduced in the June number of the *University Medical Magazine*, showing a "jack-stone" in a child's œsophagus. Dr. J. William White, of Philadelphia, who gives the history of the case, was able to ascertain the precise situation of the foreign body, which he successfully removed by gastrotomy. The first number of a special periodical entitled the *Archives of Clinical Skiagraphy* has reached us from London, where it is published by the Rebman Publishing Company and edited by Mr. Sydney Rowland, the *British Medical Journal's* special commissioner for investigating the applications of "the new photography" to medicine and surgery. We suppose the journal is to be issued monthly; the first number is dated May, 1896. The illustrations are very handsome.

THE CÆSAREAN OPERATION PERFORMED SUCCESSFULLY THREE TIMES ON THE SAME WOMAN.

In the *Centralblatt für Gynäkologie* for May 23d, Dr. C. N. van de Poll, of Amsterdam, gives the history of a woman on whom the Cæsarean operation had been performed twice by Professor van der Mey and once by himself. The first operation was done in February, 1886, the second in September, 1888, and the third in February, 1896. On the last occasion the Porro operation was performed. The case was one of flat rhachitic pelvis.

THE HOMBURG SPA.

A little volume entitled *Homburg Spa; an Introduction to its Waters and their Use*, prepared by Dr. Arnold Schetelig, has been published in London by Messrs. J. & A. Churchill and in Frankfort on the Main by Mr. Johannes Alt. It is printed in English—very good English in the main—and is intended for popular as well as professional reading. It deals with the geology of the locality, the origin of the waters, the water supply of Homburg, the characteristics of the springs, and the medicinal action of the waters.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending June 9, 1896:

DISEASES.	Week ending June 2.		Week ending June 9.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	11	2	16	5
Scarlet fever	81	4	88	4
Cerebro-spinal meningitis	2	1	3	3
Measles	292	11	260	26
Diphtheria	250	33	278	36
Tuberculosis	175	111	139	102

Dr. Rose's Lecture on the Proper Pronunciation of Greek took place in the Academy of Medicine's building on Friday evening, June 5th. The chairman, Professor Orris, of Princeton, was introduced by Dr. Charles A. Leale. We publish the following account in almost the very words in which it has been furnished to us:

"The evening was certainly one of the most successful ever seen in the Academy building. The whole platform in Hosack Hall was covered with flowers; the two columns were transformed into two columns of roses. Over the platform were displayed the American and the Greek flags; the latter, with its white and blue stripes and the large white cross—in the place where in the American flag the stars are found—made a certain impression by its noble simplicity. It seemed as if this cross was telling of the most cruel and the most heroic war of seven years of the Greeks against the Turks for independence. There was fine classical music, corresponding thus in character with the classical subject the speakers were to treat. Everything had a festal appearance, the audience above all, composed in great part of ladies in their handsomest attire, as if they were in competition with their images, the flowers, which were distributed everywhere. An interesting effect was produced by Greeks in their splendid national costume. Alongside of so much beauty there were many men of distinction. All present were favorably

inclined to the speakers and applauded each and every one with true enthusiasm. The greatest share of applause, however, and bouquets besides, coming from fair ladies, were showered on little Maria Rose when she recited a Greek poem and sang the Greek national hymn and another Greek patriotic song, in order to illustrate what her father had said of the beauty of the Greek language. In closing his paper, Dr. Rose addressed his Greek friends in their own tongue, saying: 'The Greek is a language remarkable in every respect. There is nothing wanting to constitute it the most beautiful language of Europe. It is, without the shadow of a doubt, the most perfect. Greece has excellent writers at the present time, although it is only three quarters of a century that she has again been a free and independent nation. The glory and prosperity of Greece are things of the future, not only of the past. The beautiful, like the Greek language, shines like the sun upon this world; the beautiful lives forever. Greeks: Hurrah for Greece, hurrah for the Greek people, hurrah for the American philhellenes!' Those present will never forget with how much joy the word ζήτω was repeated, and certain it is that there was not one in the whole audience who did not feel affected by the outburst of this national expression. It is impossible to say to whom most credit was due, to the chairman, who had come from Princeton, to the Greek consul, to Mr. Sprague, the president of a bank, but at the same time a warm philhellene, or to Professor Leotsakos. They all spoke well, they all were applauded in such a way that nobody could distinguish who received the greatest share. Every one who was present will remember the occasion with pleasure. It is certain that Dr. Rose gained a great number of friends for the noble cause for which he is working."

The Woman's Medical College, of Baltimore, has lengthened its annual course to eight months (October 1 to June 2). The following appointments have been made in the faculty: R. Tunstall Taylor, M. D., professor of orthopædics; Thomas C. Gilchrist, M. R. C. S., professor of dermatology; Henry P. Hynson, Ph. G., professor of pharmacy; G. Milton Linthicum, M. D., professor of physiology; and Kemp Battle Batchelor, M. D., associate professor of obstetrics. A chair of mental diseases has been added, together with departments of bacteriology and embryology. Professor Claribel Cone has been elected to the board of trustees.

The Trained Nurses' Directory.—This is the title of a new semi-annual publication compiled and edited by Miss M. Louise Longeway, a graduate of the Bellevue Hospital school. It gives classified lists selected from those of the graduates of New York, Brooklyn, and other schools who are doing business in New York and its vicinity, together with a variety of useful information more or less connected with the practice of nursing. The little book is suitable for the pocket, and will undoubtedly prove serviceable to New York physicians.

The Second Pan-American Medical Congress.—Professor Dr. Don Francisco Bastillos, Calle de Tacuba No. 7, Ciudad de Mexico D. F. Republica Mexicana, has been elected treasurer of the Second Pan-American Medical Congress, to be held in the city of Mexico beginning the 16th of November. All members residing in the United States and Canada, and others who contemplate attending, should forward the registration fee, $5, gold, to him at once, and notify Dr. C. A. L. Reed, of Cincinnati.

The Massachusetts Medical Society.—At the recent annual meeting, officers for the ensuing year were elected as follows: President, Dr. H. P. Walcott, of Cambridge; vice-president, Dr. A. Wood, of Worcester; treasurer, Dr. E. M. Buckingham, of Boston; recording secretary, Dr. C. W. Swan, of Boston; librarian, Dr. E. H. Brigham, of Boston; orator, Dr. Z. B. Adams, of South Framingham.

The Washington State Medical Society.—At the annual meeting, held in Tacoma on May 19th and 20th, Dr. R. L. Thomson, of Spokane, was elected president, and Dr. J. M. Semple, of Medical Lake, secretary. The next meeting will be held in Spokane in May, 1897.

The Death of Sir George Johnson, M. D., F. R. S., of London, is announced as having taken place on Wednesday, June 3d. He was in his seventy-eighth year.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from May 2 to June 6, 1896:*

Johnson, Richard W., Captain and Assistant Surgeon, is granted leave of absence for thirty days, to take effect about May 14th.

Waters, William E., Lieutenant and Deputy Surgeon General, is granted leave of absence for two months, to take effect on or about July 1st.

Brooke, Benjamin, First Lieutenant and Assistant Surgeon, is granted leave of absence for four months, on surgeon's certificate of disability.

Heyl, Ashton B., Captain and Assistant Surgeon. The order assigning him to duty at Fort Canby, Washington, is revoked; he is relieved from duty at Fort Thomas, Kentucky, and ordered to Fort Riley, Kansas, for duty, relieving Raymond, Thomas U., Captain and Assistant Surgeon. Captain Raymond, on being thus relieved, is ordered to Fort Canby, Washington, for duty.

La Garde, Louis A., Captain and Assistant Surgeon, is granted leave of absence for one month.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the Sixteen Days ending May 31, 1896:*

Hamilton, J. B., Surgeon. Granted leave of absence for ten days. May 23, 1896.

Brown, B. W., Passed Assistant Surgeon. Granted leave of absence for six days. May 25, 1896.

Gardner, C. H., Assistant Surgeon. Ordered to examination for promotion. May 27, 1896.

Boards Convened.

Board convened to meet in Washington, D. C., June 15, 1896, for the examination of officers for promotion and candidates for appointment in service: Surgeon G. W. Stoner, chairman; Surgeon Fairfax Irwin; Passed Assistant Surgeon C. E. Banks, recorder. May 25, 1896. Board convened to meet in New York city, May 27, 1896, for the physical examination of candidate for appointment in Revenue Cutter Service: Surgeon W. A. Wheeler, chairman; Passed Assistant Surgeon J. H. White, recorder. May 25, 1896.

Society Meetings for the Coming Week:

Monday, *June 15th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Hartford, Conn., Medical Society; Chicago Medical Society; Cleveland Society of the Medical Sciences.

Tuesday, *June 16th:* Army and Navy Medical Association (first day—Havana, Ill.); Colorado State Medical Society (first day—Denver); New York Academy of Medicine

(Section in General Medicine); Buffalo Academy of Medicine (Section in Pathology); Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Society of the County of Kings, N. Y.; Baltimore Academy of Medicine.

Wednesday, *June 17th:* Minnesota State Medical Society (first day—Minneapolis); Army and Navy Medical Association (second day); Colorado State Medical Society (second day); Medico-legal Society, New York; Northwestern Medical and Surgical Society of New York (private); Medical Societies of the Counties of Alleghany (annual) and Tompkins (annual—Ithaca), N. Y.; New Jersey Academy of Medicine (Newark); Philadelphia County Medical Society.

Thursday, *June 18th:* Minnesota State Medical Society (second day); Army and Navy Medical Association (third day); Colorado State Medical Society (third day); New York Academy of Medicine; Brooklyn Surgical Society; New Bedford, Mass., Society for Medical Improvement (private).

Friday, *June 19th:* Minnesota State Medical Society (third day); New York Academy of Medicine (Section in Orthopædic Surgery); Brooklyn Medical Society; Baltimore Clinical Society; Chicago Gynæcological Society.

Saturday, *June 20th:* Clinical Society of the New York Postgraduate Medical School and Hospital.

Births, Marriages, and Deaths.

Married.

Adams—Worthington.—In Pittsfield, Illinois, on Thursday, June 11th, Dr. Albyn Lincoln Adams and Miss Minna Worthington.

Ager—Snowden.—In Blythebourne, New York, on Tuesday, June 2d, Dr. Louis Curtis Ager and Miss Evelyn Salisbury Snowden.

Chapleigh—Pratt.—In Worcester, Massachusetts, on Tuesday, June 2d, Dr. Alfred Chapleigh and Miss Kathryn Pratt.

Hitchcock—Hunter.—In Chicago, on Tuesday, June 9th, Mr. Frederick H. Hitchcock and Miss Ethel Olivia Hunter, granddaughter of Dr. Robert Hunter, of New York.

Kendal—Hickel.—In Buffalo, on Wednesday, June 3d, Dr. Hiram Kendal and Miss Fida Hickel.

Kerrigan—Kempt.—In Lindsay, Ontario, on Wednesday, June 10th, Dr. Joseph A. Kerrigan, of New York, and Miss Florence Kempt, daughter of Dr. William Kempt.

Koester—Rathman.—In Buffalo, on Wednesday, June 3d, Dr. Charles George Koester and Miss Emma Rathman.

Simrall—Beall.—In Vicksburg, Mississippi, on Wednesday, June 3d, Mr. George Martin Simrall and Miss Rosa Beall, daughter of Dr. T. T. Beall.

Westervelt—McFerran.—In Dallas, Texas, on Wednesday, June 3d, Dr. John Douglas Westervelt and Miss Irene McFerran.

Died.

Chamberlain.—In Detroit, on Thursday, June 4th, Dr. David C. Chamberlain.

Picot.—In Geneva, New York, on Friday, June 5th, Dr. Mitchell H. Picot.

Steel.—In Milwaukee, on Tuesday, June 2d, Dr. Thomas Steel, in the eighty-seventh year of his age.

Letters to the Editor.

DICKENS ON THE UVULA AND TONSILS.

Fort D. A. Russell, Wyo., *May 30, 1896.*

To the Editor of the New York Medical Journal:

Sir: Apropos of your editorial in the *Journal* of May 16th, on an article by Dr. Charles L. Dana, in the *American Journal of Insanity*, on Deformity of the Uvula as a Stigma of Degeneracy, is the following extract from a sketch by Dickens, in his *Uncommercial Traveller:*

In describing a visit to the refractory ward of the Wapping Workhouse, he says: "I have never yet ascertained in the course of my uncommercial travels why a refractory habit should affect the tonsils and uvula; but I have always observed that refractories of both sexes and of every grade, between the ragged school and the Old Bailey, have one voice, in which the tonsils and uvula gain a diseased ascendency."

Joseph T. Corson, M. D.
Major and Surgeon, U. S. A.

A WARNING TO APOTHECARIES.

30 Reade Street, New York, *June 5, 1896.*

To the Editor of the New York Medical Journal:

Sir: A paragraph is going the rounds of the medical journals giving a formula for making palatable castor oil. This formula is patented as by the following list of patents:

No. 410,940, dated September 10, 1889,
No. 470,715, dated March 15, 1892,
No. 470,714, dated March 15, 1892,
No. 524,513, dated August 14, 1894,
No. 524,514, dated August 14, 1894,

and if druggists are induced to prepare this article themselves, it will lead to a multitude of lawsuits like those instituted in the "drive well" case.

Some scheming lawyer would like to take up this case for one half the profits, and I think journals should warn the druggists so that they may not be caught in a trap.

A. J. White.

Proceedings of Societies.

AMERICAN SURGICAL ASSOCIATION.

Annual Meeting held in Detroit on Tuesday, Wednesday, and Thursday, May 26, 27, and 28, 1896.

The President, Dr. Louis McLane Tiffany, of Baltimore, in the Chair.

The Operative Treatment of Trifacial Neuralgia was the subject of an address by the President, in which he stated that forty-five operators had participated in the hundred cases reported, of which number twenty-four had each operated in one case only. He also mentioned that there was diminished sensation in these cases, with lessened lacrymation. He considered the curving of the tongue due to atrophy of the muscles, but did not understand why the perception of heat and cold should be interfered with. As to tying the carotids, Dr. Park, of Buffalo, had successfully done this in two cases.

Dr. S. J. Mixter, of Boston, read a short paper in discussion of this subject, which was then thrown open for general discussion.

Dr. W. W. Keen, of Philadelphia, was very much disappointed to learn that the mortality of operations for the relief of trifacial neuralgia was ten per cent. He had had two deaths out of nine cases, one of which was due to sepsis and was avoidable. He explained the high mortality as being due, in his opinion, to the fact that the operations had been done by so many different operators, and thought that special operations should be reserved for those who had had some special training. In three of the nine cases mentioned, trouble had been experienced with the cornea, but in no case had the eye been lost. The following is Dr. Keen's method of dealing with corneal ulcer: Sew the lids together at the margin so as to prevent the opening of the eye; take a circular piece of rubber plaster, cut out a circular hole in the centre a little smaller than a watch glass, insert the watch glass in the hole thus made, and place this shield over the eye, the non-adhesive surface being next to the eye. Although the rubber plaster would not absolutely occlude the whole space, yet the inside of the watch glass was always moist.

Dr. J. Ewing Mears, of Philadelphia, asked whether the president was clear in his own mind that the lesion had existed in the Gasserian ganglion. If his experience with the operation upon the Gasserian ganglion demonstrated that the relief from pain was permanent, Dr. Mears felt that the real lesion had been discovered.

Dr. George Ryerson Fowler, of Brooklyn, stated that in one of his cases there had been a recurrence of pain, although he was absolutely certain that he had removed the ganglion. Post-mortem examination showed the existence of a neuroma upon the stump in that portion which occupied the foramen rotundum. He fully agreed with Dr. Keen as to the necessity of keeping the eye protected, and mentioned an illustrative case. Concerning the sclerotic changes in the vessels, it might be that they were at the root of the pathology of these cases. Dr. Fowler referred to a case operated upon by Dr. Morton, of Philadelphia, in which Meckel's ganglion had positively been removed, and yet the pain had returned with all its former violence in less than two years, when ligation of the common carotid had given the man permanent relief. The speaker mentioned other cases in which ligation of the carotid had produced excellent results, in one of which there had been a deviation of the tongue toward the side operated upon. In this case the patient had been unable to straighten the tongue. The speaker referred also to a case in which the patient had died during an epidemic of sepsis, and stated that he saw no reason why there should not be an epidemic of sepsis as well as of small-pox or scarlet fever.

Dr. John Parmenter, of Buffalo, mentioned the case of an elderly woman who had facial neuralgia, and also a small aneurysm of the external carotid, in whom ligation of the common carotid had been followed by complete recovery. He also cited a case in which he had done an operation successfully on a man who had been subjected to three previous operations.

Dr. H. S. Weeks, of Portland, Maine, doubted if a surgeon was justified in resorting to intracranial operations before an extracranial one had been done, in view of the large mortality. His plan was to trephine through the ramus of the jaw, seize the inferior dental nerve, and pull it away, as he considered this method much better than cutting.

Dr. N. P. Dandridge, of Cincinnati, cited a case in which he had operated two years and a half ago, since which time the man had been relieved from pain, but there had been marked deformity of the face on account of atrophy of the muscles. There was also a small sinus leading down to dead bone.

Dr. Christian Fenger, of Chicago, preferred the extracranial operation, as he considered it less dangerous. He called attention to the fact that the mortality from ligation of the common carotid was eighteen per cent.

Dr. Joseph Ransohoff, of Cincinnati, did not think ten per cent. a very high mortality under all the circumstances, and said if all the cases were included it would be nearer fifty per cent. In his opinion, the lesion was not located in the Gasserian ganglion, but centrally.

Dr. Robert Abbe, of New York, said the members should not be daunted by a mortality of ten per cent., as in the next hundred cases it would be much less. In his opinion, preference should be given to an anterior operation in the first place. Now that we knew what to steer clear of, with the improvements in asepsis and the avoidance of operating on old people, the mortality should be considerably lessened.

Dr. W. W. Keen said he had omitted to mention two methods of medical treatment which had been of great service—one recently suggested by Dr. Dana, of New York, that of giving massive doses of strychnine, and the other suggested by Esmarch, who had spoken of the value of purgatives.

Dr. Maurice H. Richardson, of Boston, believed that attacking the ganglion should be done as a last resort, especially in old people and those who were unable to stand so formidable an operation as intracranial neurectomy. In many cases a simple operation would give considerable relief.

Dr. Fowler explained that the mortality of eighteen per cent. in ligations of the carotids included cases of aneurysm, gunshot wounds, etc. In fifty-two cases, where the vessels were not affected by disease or complicated by carcinomatous tumors, the mortality had been less than five per cent.

Dr. P. S. Conner, of Cincinnati, said the two most important points were the cause of the neuralgia and the results of operative interference. In a certain proportion of cases the exemption from pain ranged from three months to three years, while in another proportion the exemption was scarcely worth mentioning, as the pain returned immediately after the operation. In some cases the loss of blood during the operation and the shock from the operation had caused periods of freedom from pain. The propriety of the operation had been established, as a man would rather take forty-nine chances out of fifty to get relief.

Dr. T. A. McGraw, of Detroit, was of the opinion that sufficient investigation had not been made of the possibility of the neuralgic condition being due as well to motor as to sensory nerves, and stated that he was not at all sure that a division of some of the motor nerves might not be of great benefit.

Dr. Richardson stated that this operation had sometimes resulted in considerable facial deformity, but with no relief of the neuralgia.

Dr. Mixter mentioned two cases in which merely reopening the old intracranial wound had afforded some relief.

Tuberculosis of the Female Genital Organs (including Tuberculosis of the Kidney).—Dr. Albert Vander Veer, of Albany, stated that this subject had been neglected until recent years, and that modern ideas concerning it depended upon careful histological and bacteriological examinations. Tuberculosis of the female pelvic viscera was not limited to any age, the extreme limits being ten weeks and eighty-three years. External genital lesions might be confounded with

tuberculosis. Heredity was important as suggesting tuberculous possibilities. Tuberculosis was extremely rare in the external genitals, but by no means infrequent in the uterus. Tuberculosis of the uterus could be demonstrated by microscopic examination of the discharges and by curetting. Gonorrhœal infection was often grafted upon tuberculosis. Sometimes infection took place through the fingers, or the instrument, or the semen. Tuberculosis originated in the tubes and infected the uterus and cervix. The uterus could be infected from without or within, and the infection was aided by a lacerated cervix, pelvic peritonitis, trauma, etc. The symptoms were local irritation, a pea-sized wart near the vaginal outlet, a discharge from the uterus, etc. The distinction between the ulcers of syphilis and epithelioma depended on age, history, local appearances, etc. Tuberculosis of the cervix might be mistaken for cancer. Many vaginal cases depended on infection from the tubes, and tuberculous peritonitis might infect the vagina and tubes. The author mentioned several cases illustrative of the points mentioned.

With regard to tuberculosis of the kidney, there were two forms, (1) miliary tuberculosis and (2) caseous or true tuberculosis. The author gave the details of one or two cases, and referred at some length to Kelly's nephro-ureterectomy.

Tuberculous Peritonitis.—Dr. Robert Abbe, of New York, thought that, in reviewing this interesting subject, it gave a fairer understanding of the multiform appearances of the disease if we viewed it from the standpoint of the bacillus, rather than, as some had done, from the gross appearances which had led to the division into the ascitic, the dry, and the caseating forms. A sudden tuberculous eruption into the peritoneal cavity might be as acute in symptoms and duration as peritonitis from other causes. A slower outbreak might result in ascitic distention in three or four weeks, and a less virulent bacillus action might occupy months in inducing ascites and wasting. In other cases, possibly due to the route of invasion, a dry or adhesive form followed in which hectic and rapid wasting resulted. Again, the bacillus produced an outpouring of thick lymph and flocculent serum, which rapidly became purulent, producing asymmetrical cakes of thickened omentum, matted coils, and encapsulated purulent collections. The bacillus product rapidly caseated and ulceration and fistulæ might result. All phases of the disease might be regarded as representing the life history of the bacillus and its products. Tuberculous peritonitis might be, and in the early stages often was, the only tuberculous manifestation in the patient; hence, if it was overcome here, a practical cure often followed. Even when other phases of infection (pleural, intestinal, or bronchial) were seen, an operative cure of the peritonitis had often been followed by general recovery. The mode of entrance of the bacillus was directly through the intestinal wall or through ulcerating typhlitis, or from tubal or ovarian tuberculosis, or through the blood. The professions of a few recent authors of having cured tuberculous peritonitis by medical treatment were reviewed and credited.

The unquestioned cure of true tuberculous peritonitis by laparotomy was proved by two classes of cases—those in which the patients had long survived the operation, and those in which at the autopsy, long afterward, there had been found no tubercles, although they had studded the peritonæum at the time of the operation. Experimental proof in animals upheld also the operation by simple laparotomy and evacuation of the ascites; closing the dry abdomen was credited with a large number of cures. Irrigation with warm salt solution was advocated by preference. A camphor-naphthol application, as used by Rendu, was advised for bad cases.

Dr. Abbe reviewed many interesting and illustrative cases in speaking of direct medication. The many theories advanced to account for the surprising cures were carefully considered, and it was said in conclusion that the theory that was sustained by most facts was that based on the life history of the bacillus and the capacity of the animal economy not only to suppress the activity of the organism by encapsulating it, but to remove it by absorption. The proper opportunity for conquests was not afforded in the presence of ascitic fluid, which acted as a veritable culture bouillon and by its fluidity aided dissemination. When, however, the peritonæum had been aroused by congestion, which follows evacuation, and a reactionary inflammation was set up, engendering cell hyperplasia, the intruder was walled in and retrograde degeneration was set up.

(*To be continued.*)

AMERICAN GYNÆCOLOGICAL SOCIETY.

Twenty-first Annual Meeting, held in New York, on Tuesday, Wednesday, and Thursday, May 26, 27, and 28, 1896.

The President, Dr. William M. Polk, of New York, in the Chair.

An Address of Welcome was delivered by Dr. William T. Lusk in which he reviewed some of the notable achievements of the society.

Virginal and Senile Endometritis.—Dr. Paul F. Mundé, of New York, read a paper on this subject. He said that it was not very uncommon for the virgin uterus to give evidence of chronic catarrhal inflammation, and in some instances there would be erosion and eversion of the cervical lips to such an extent that the appearance would closely simulate that presented by a puerperal laceration of the cervix. While he would not for trivial reasons resort to local examination of the sexual organs in a young girl, he was convinced that many of these cases called for treatment. The condition was commonly characterized by dysmenorrhœa, leucorrhœa, and sometimes rather profuse menorrhagia. The speculum would reveal the erosion and eversion already described. The treatment consisted in excising the hypertrophic mucous membrane, curetting the endometrium, and, if necessary, suturing of the everted cervical lips. In this form of endometritis there would often be a muco-serous discharge and a chronic inflammation of the vulva and vagina. For the erosions caused by this acrid discharge, nothing was better than the local application of a solution of nitrate of silver, of the strength of half a drachm or a drachm to the ounce of water. Sometimes there would be a sanguineous "spotting," which would then call for a careful distinction with the aid of the microscope between senile endometritis and malignant disease.

Dr. Charles B. Penrose, of Philadelphia, referred to a reported case of a congenital split in the cervix of an infant. In this case there had also been erosion, but no evidence of inflammation of the mucous membrane.

Dr. A. Lapthorn Smith, of Montreal, said that dysmenorrhœa and menorrhagia in young girls seemed to be due not infrequently to swelling of the endometrium and occlusion of the uterine canal. Tight corsets, exposure of the feet to cold, chronic constipation, and the many other indiscretions of which young girls were guilty were responsible for this condition.

Dr. Matthew D. Mann, of Buffalo, said that he had already called attention to the fact that both virginal and senile endometritis were often due, more or less directly, to a constitutional condition akin to lithæmia, and that therefore their

successful treatment demanded proper attention to improvement of the general health.

Dr. Chauncey D. Palmer, of Cincinnati, said that he had observed this erosion and eversion of the cervical lips in virgins, and had been able by tracheloplastic operations to completely relieve all the accompanying symptoms.

Dr. Howard A. Kelly, of Baltimore, said that he had never seen endometritis in cases in which he had been positive that the patient was a virgin, except there had been some prior local use of instruments. He would warn against very active local treatment. In the senile form, the process was chiefly confined to the cervical mucosa.

Dr. W. T. Lusk, of New York, said that young virgins not uncommonly suffered from severe backache, dysmenorrhœa, and menorrhagia—all due to partial occlusion of the external os and consequent retention of the discharge. Thorough dilatation of the external os alone would suffice to remove all these unpleasant symptoms, and restore the uterus to its normal size.

Dr. J. Taber Johnson, of Washington, said that he had known much grief to be brought to households by the family physician not knowing that this condition of the cervix simulating true laceration was not inconsistent with virginity. As he had known two instances in which the uterus had been unnecessarily removed for supposed malignant disease, he would emphasize the necessity of confirming the diagnosis in every case suspected to be malignant by the use of the microscope.

Dr. Mundé said that in the cases referred to in his paper there had been every reason to believe that the patients were really virgins. He would not underestimate the value of constitutional treatment in these cases of endometritis.

Liability to Prosecution for Damages in Abdominal Surgery.—Dr. Cyrus A. Kirkley, of Toledo, read a paper with this title. He said that the average juryman looked upon the medical expert as a witness having a bias for the side calling him. After setting forth the reasons for a reform in the matter of medical expert testimony, he commended the plan adopted in England of having all the medical witnesses of both sides confer together before giving their testimony, and suggested that if the court were to appoint a medical commission to hear and pass upon the medical points involved, some of the present abuses would be avoided. He also quoted a legal opinion to the effect that a surgeon, operating in an emergency by abdominal section upon a patient who had no chance for life without such operation, should not be liable in damages if this view of the urgency of the case were concurred in by other well-qualified practitioners.

Dr. Kelly suggested the observance of the following rules to minimize as far as possible the liability of the surgeon to prosecution: 1, Keep a written record of the cases and of the visits made; 2, Make careful notes, as far as possible in the patient's own language, of the symptoms complained of and also of the results of the first examination; 3, A note should be made of the proposed line of treatment and of what was promised the patient; 4, Never promise more than the actual mechanical result of the operation; 5, State frankly the risks of the operation; 6, Keep careful records of the convalescence.

Dr. Edward P. Davis, of Philadelphia, said that a suit might arise in obstetrical practice, after a normal parturition, from the fact of a sudden rupture of an ovarian cyst, and death from sepsis, two or three weeks after confinement. It was already the practice in Pennsylvania in civil suits for a physician to be selected by each side.

Gynæcology and General Medicine: Their Reciprocal Relations.—Dr. Chauncey D. Palmer, of Cincinnati, spoke of the close relationship existing between the pelvic organs of woman and the whole nervous system. Her delicate organization made her peculiarly liable to certain disorders, particularly those of the mind, and the exhaustion attendant upon menstruation and parturition diminished her powers of resistance at these times, thus making her an easy prey to infection. He said that while there was very little gynæcology outside of the domain of general medicine, there was scarcely a disease of the general system that did not affect the circulation, innervation, and functions of the pelvic organs.

Dr. John Byrne, of Brooklyn, thanked the author for having written a paper on this sadly neglected subject.

Dr. Ford, of Utica, cited a case illustrative of the advantages to be derived from calling to our aid the combined forces of medicine and surgery.

Dr. S. C. Gordon, of Portland, Me., said that he often resorted to curetting for the relief of virginal endometritis, and had found that after this local treatment, the anæmia so often present, and so obstinate before this, would yield to appropriate general medication. He felt that there had been altogether too much sentiment expended regarding this matter of the examination and local treatment of virgins.

The Clinical Importance of the Menstrual Wave.—Dr. Arthur W. Johnstone, of Cincinnati, presented a paper on this subject in which he described what was now familiarly known as "the Stephenson wave." When there was a pathological induration of the tunica albuginea of the ovary, there would be, with the shrinkage of tissue occurring during the trough of the menstrual wave, a necessary stretching of the surface of the ovary, which would be productive of pain. Whenever a disorder appeared at any particular point of the menstrual cycle, the physician should immediately direct his attention to the condition of the pelvic organs. Many sins against the ovaries would be avoided by proper attention to this menstrual wave. Regarding the effect on mental affections, he said that he was of the opinion that it was the crest of the wave that did the mischief.

Dr. A. J. C. Skene, of Brooklyn, referring to Dr. Palmer's paper, said that a specialist was not worthy of the name if he did not possess a thorough knowledge of general medicine. The paper by Dr. Johnstone was very suggestive, for it brought up questions regarding which our practice had been changing and unsatisfactory. Only a short time ago many had been of the opinion that epilepsy, when associated with ovarian disease, might often be cured by the removal of the ovaries; yet to-day the neurologists told us that they did not believe that a case of genuine epilepsy had ever been cured by any operation on any organ of the body. The speaker said that he entertained the highest opinion of Stephenson's work, and that he had found his views a most excellent guide in his clinical work.

Dr. George J. Engelmann, of Boston, said that, while it could not be denied that the relations between gynæcology and general medicine were intimate, they were often not evident, and experience in one case was no guide in another.

Dr. Johnstone said that he had never seen a case of intermenstrual pain relieved until the menopause had been brought on, and the evidence seemed to point to stretching of nerves on the anæmic side of the menstrual wave as the cause of the pain.

Aids in Obstetric Teaching.—Dr. J. Clifton Edgar, of New York, presented a paper with this title. (To be published.)

Two Cases of Pregnancy following Removal of both Tubes and Ovaries; Tubal Pregnancy becoming Abdomi-

nal; the Effect of Complete Hysterectomy upon the Vagina.—Dr. S. C. Gordon, of Portland, Maine, presented reports of several cases illustrating the conditions embodied in the title of his paper. The first patient had had both tubes and ovaries removed in May, 1891, but had nevertheless conceived in June, 1894, and had been delivered in February, 1895. Since that time she had menstruated regularly.

In March, 1894, he had removed, as he supposed, all of both ovaries and tubes, but the woman had menstruated regularly after the operation, and had been delivered of a healthy child on March 12th of this year.

The next case was one which had evidently been primarily a tubal pregnancy, but at the time of the operation a grayish tumor had been found lying in the general cavity and entirely distinct from the Falloppian tube. It contained a fœtus, which gasped a few times.

Touching the question of the effect of complete hysterectomy upon the vagina, Dr. Gordon said that he had examined many women after the operation, and had been led to believe that the weight of the remaining cervix after the incomplete operation had a tendency to cause prolapse of the vaginal roof. By his technique, the broad ligaments were drawn up as soon as cut, by a continuous suture, and the vagina was lifted above its normal position and maintained in this position by the suture. In this way the vagina was actually lengthened.

Case of Double Ovariotomy followed by Pregnancy and Delivery at Term.—Dr. R. Stansbury Sutton, of Pittsburgh, reported such a case. In 1892 he had removed a multilocular ovarian cyst from each side. On one side he had taken the precaution to sear the pedicle with the cautery, but on the other side he had omitted this precaution, as the cautery was not at the moment sufficiently hot. On June 10, 1894, this woman was delivered of a child weighing over ten pounds, and in the present year she had had another child.

Dr. A. Lapthorn Smith reported a case in which he had operated just after a menstrual period, removing both tubes and ovaries. Very shortly after the operation the woman had given signs of pregnancy, and had in due time been delivered of a child. It was probable here that the fecundated ovum had passed into the uterus just prior to the operation.

Dr. Ernest Cushing, of Boston, said that after considerable experience with hysterectomy he felt warranted in saying that there should be no shortening of the vagina, whether or not a portion of the cervix was allowed to remain.

Dr. A. Palmer Dudley, of New York, said that he thought that his work in conservative surgery on the tubes and ovaries during the last few years was sufficiently justified by the fact that he now had records of three patients who had been delivered of children after such operations, and of three more who were pregnant at the present time. One of the causes of success, he believed, was the use of the catgut ligature, which softened sufficiently early to allow of the tube becoming patent.

Dr. Arthur Johnstone said that the cases reported could be explained by supposing that by some means the ligated tube had again become patent, or that there was more than one opening to the tube, and that a piece of ovarian tissue had been allowed to remain—quite possibly a "third ovary."

Dr. Gordon referred to a case in which menstruation had persisted after double ovariotomy, and even after the subsequent removal of all of the uterus except the cervix.

Dr. Sutton said that if the ligature was applied sufficiently close to the horn of the uterus to cut the sympathetic nerve, it was not probable that menstruation would continue.

(To be continued.)

Miscellany.

The Treatment of Snake-bite.—The *Australasian Medical Gazette* for April contains a report of a presidential address which was delivered by Dr. E. J. Jenkins before the New South Wales Branch of the British Medical Association, in which he alludes to Dr. Craig W. Macdonald's paper on experience with the North Queensland snakes. Dr. Macdonald concluded, he says, that the old method of treatment by ligaturing, scarifying, and sucking the bitten part was more to be relied upon than injections of strychnine. Dr. R. H. Elliott, of Madras, also made numerous experiments in India in a strictly scientific manner with this drug in cases of cobra poisoning, and he found that when it was injected subcutaneously it often hastened death in a marked manner and that it never materially retarded it.

Experiments were made at the Sydney University on animals which had been poisoned by the venom of black and tiger snakes, by Mr. C. J. Martin, and in all cases, says the author, strychnine proved useless.

Strychnine, says Dr. Jenkins, undoubtedly has its strong supporters, and in some cases it may certainly even save life; but, in the light of more recent investigations, it can not be regarded as an antidote, and is a remedy potent for evil in the hands of the unskilled. In May, 1894, Dr. Calmette, Director of the Pasteur Institute at Lille, described in full his researches on snake poison, and demonstrated not only that animals could be rendered resistant to cobra and other snake venom, but that the serum of such immunized animals contained a powerful antitoxine, which could be used successfully as an antidote.

On June 30, 1895, he continues, Professor F. R. Fraser, of Edinburgh, apparently made a similar discovery, but the whole credit rests with Dr. Calmette, who worked under the direction of Dr. Roux. This snake-bite antitoxine, or antivenene, will one day be heard of in Australia, and will replace the strychnine cure and other unsatisfactory remedies. It has already been successfully used on man by Dr. Lepindy, director of the French Colonial Bacteriological Laboratory of Saigon, Cochin-China.

The Kentucky State Medical Society.—The forty-first annual meeting was held in Lebanon, on June 10th, 11th, and 12th, under the presidency of Dr. Jonathan A. Lewis, of Georgetown. The programme included the following papers: Parenchymatous Nephritis, by Dr. E. S. Smith, of Hodgenville; Interstitial Nephritis, by Dr. George E. Davis, of Salvisa; Amyloid Kidney, by Dr. R. C. McChord, of Lebanon; Nephritis in Children, by Dr. Henry E. Tuley, of Louisville; The Differential Diagnosis between all the Varieties as shown by the Uranalysis, by Dr. Carl Weidner, of Louisville; Injuries of the Brain, by Dr. W. L. Rodman, of Louisville; Hysterectomy; Vaginal *versus* Suprapubic, by Dr. William H. Wathen and Dr. A. M. Cartledge, of Louisville; Operative Procedures for Pelvic Inflammation, by Dr. Louis Frank, of Louisville; The Care of Premature Infants, by Dr. R. B. Gilbert, of Louisville; The Resuscitation of Stillborn Infants, by Dr. T. B. Greenly, of Meadow Lawn; Eye-strain, by Dr. A. G. Blincoe, of Bardstown; Punctured Wounds of the Eye, by Dr. P. Richard Taylor, of Louisville; Appendicitis with Purulent Peritonitis, by Dr. J. G. Carpenter; A Study in Appendicitis, by Dr. R. D. Pratt, of Shelbyville; Transfusion—Infusion—Autofusion, by Dr. Augustus Schachner, of Louisville; Gonorrhœa in Women, and its Treatment, by Dr. J. C. Carrick, of Lexington; Some of the Curiosities of Deafmutism, by Dr. William Cheatham, of Louisville; The Surgi-

cal Aspect and Treatment of Pleural Inflammation, by Dr. R. C. Falconer, of Lexington; Cholelithiasis, by Dr. C. B. Schoolfield, of Dayton; Modern Gastrostomy for Stricture of the Œsophagus, with a Report of a Case, by Dr. L. S. McMurtry, of Louisville; Disease of the Accessory Nasal Cavities, by Dr. J. A. Stucky, of Lexington; The Treatment of Trachoma and its Complications, by Dr. T. C. Evans, of Louisville; The Scientific and Common-sense Treatment of Typhoid Fever from an Ætiological and Pathological Standpoint, by Dr. G. G. Thornton, of Gravel Switch; Hystero-myomectomy, followed by Volvulus, by Dr. Archibald Dixon, of Henderson; Antitoxine and Intubation, by Dr. S. G. Dabney, of Louisville; Intubation, by Dr. D. M. Bagby, of Walton; Rest as a Factor in Disease, by Dr. E. E. Hume, of Frankfort; Observation upon Eye Diseases and Blindness in the Colored Race, by Dr. J. M. Ray, of Louisville; A Case of Placenta Prævia, by Dr. Archibald Dixon, of Henderson; Fractures, Simple and Compound, by Dr. T. N. Willis, of Finchville, and Dr. C. C. Lewis, of Stamping Ground; Hernia, by Dr. W. O. Roberts, of Louisville; A Unique Case of Herniotomy, by Dr. W. A. Quinn, of Henderson; and The Scope of Colotomy in Cancer of the Rectum, by Dr. Jonathan M. Williams, of Louisville.

The Medical Society of New Jersey.—The one hundred and thirtieth annual meeting will be held in Asbury Park, on June 23d and 24th, under the presidency of Dr. William Elmer, of Trenton. Besides the president's address, the programme includes the following titles of papers and reports: Clinical Observation referring to Self-intoxication of Gastro-intestinal Origin, by Dr. Philip Marvel, of New York; Fibroid Tumors of the Uterus obstructing Labor—Subsequent Disappearance of the Tumors—Remarks on Uterine Fibroids as a Complication of Pregnancy, by Dr. George H. Balleray, of Paterson; Antisepsis and Antiseptics from the Standpoint of the General Practitioner, by Dr. C. R. P. Fisher, of Bound Brook; Chloroform Narcosis, by Dr. Floy McEwan, of Newark; and The Relation of the Physician to Sanitary Science, by Dr. William Elmer, Jr. A report of the committee on honorary membership and the honorary degree of doctor of medicine, by Dr. H. G. Taylor, of Camden; a report of the committee on methods for the prevention of purulent conjunctivitis, by Dr. C. J. Kipp, of Newark; a report of the committee on legislative action on bovine tuberculosis, by Dr. J. W. Stickler, of Orange; and a report of the committee on Fellows's prize essay, by Dr. O. H. Sproul, of Flemington. Dr. S. E. Milliken, of New York, will give a demonstration of Bassini's operation, and a discussion on the question Is the Therapy of Antitoxine Serum, Nuclein Solution, and Typhoid Extracts so Fully Established as to Receive the Indorsement of the Profession? will be opened by Dr. Alexander McAlister.

Orphol in the Diarrhœa of Infants.—We have been favored with advance proofs of a monograph on *The Use of Orphol for Intestinal Antisepsis and Externally*, by Dr. Edward Chaumier, from which we here give the substance of what the author has to say concerning the use of the drug (chemically pure beta-naphthol-bismuth, or naphthalate of bismuth) in the treatment of infantile diarrhœa.

When, he says, Parrot grouped under the name of athrepsia all the varied diarrhœas of infancy, our ideas had not yet been enlightened by microbiological research. He sought the cause of the diarrhœa in bad hygienic conditions, among which improper alimentation was the chief. We know now that while artificial and improper feeding doubtless has some effect in the causation of the diarrhœa, it is the microbes introduced into the intestines with the food that are mainly responsible for its ill effects. The examinations made at the Paris Infant Asylum show that the nurslings harbor a great variety of micro-organisms.

Professor Hayem has shown that the green diarrhœa of the newborn must be regarded as a contagious and infectious malady. By the immediate disinfection of all linen soiled with fæcal matters, and by treating the diarrhœa antiseptically, he caused the disease to disappear from his wards. Several writers, and among them Lesage, have studied infantile diarrhœa from the bacteriological point of view.

These infantile diarrhœas are of different kinds, there being at least three or four varieties, due to different micro-organisms. They are all contagious and are frequently spread in an asylum.

The treatment with lactic acid recommended by Dr. Hayem does well in certain cases, but fails in others. Laudanum in quarter- to half-drop doses, as recommended by Dr. Jules Simon, sometimes gives good results. The substitution of albuminized water for all nourishment is indicated in some cases. The author has tried many remedies for these diarrhœas; more especially he has studied the various bismuth salts and the manner in which their decomposition in the digestive tract causes antisepsis. After many trials he has selected orphol as the most active.

For the past two years he has used orphol in all cases of infantile diarrhœa, except those in which vomiting was the most prominent symptom. In these cases he stopped all food and gave albuminous water. When the vomiting ceased he put the patient on the use of orphol.

Orphol is not a specific for infantile diarrhœa; but it disinfects the intestine, and, while it combats the diarrhœa, it tends to prevent the nervous troubles, fluxes, etc., which seem to be the result of the absorption of microbic toxines from the intestines.

The subnitrate of bismuth is very inconstant in its action in infantile diarrhœas. It sometimes causes an abrupt cessation of the diarrhœa, to be followed by constipation for a day or two, with a subsequent return of the loose discharges. Orphol does nothing of the kind; its action is progressive and surer. Nevertheless it does not cure all the diarrhœas, and some of the patients succumb in spite of its use. It may be given in fairly large doses in children. The author never gives less than fifteen grains, and thirty grains are the ordinary daily amount for a newborn infant; we can go up from forty-five to sixty grains without danger. It may be administered suspended in syrup or mixed with honey.

Honey or Sugar in the Treatment of Scorpion Stings.—In the May number of the *Indian Medical Record*, Dr. E. Lerede Chalke, a civil surgeon of Negapatam, says that he has had hundreds of such cases to deal with and has tried various remedies to relieve the stinging pain and burning sensation which invariably are the chief symptoms for which relief is sought, and he finds that the application of honey to the affected part acts the best, producing almost instant relief. The stinging and burning sensations vary in degree according to the species of the scorpion which causes the sting. He has seen the small, pale, reddish-brown scorpions in the ceded districts evoke unbearable pain in the part stung, while the black, huge ones so common in the Kurnool district (about six inches in length, with hair on the back and claws like those of crabs) cause great agony to the victim, making him simply writhe under the pain.

He recalls the case of a delicate middle-aged woman, who was suffering from heart disease, and was stung by one of the black kind, a huge monster with formidable claws and a

big sting. The woman was carried to his bungalow in great agony, cold and clammy, and begged of him to relieve her of the intense pain which, she said, she could bear no longer. There was a large gathering in his place at the time, including two of the profession. He immediately brought the honey, which he applied gently but freely over the affected part. The relief was almost instantaneous, to the astonishment of the patient and the spectators, particularly the physicians. At the same time he gave her ten minims of chlorodyne with brandy, which roused her spirits within a short time. He applied the honey again after an interval of five minutes, when the patient expressed herself nearly rid of the pain and comfortable. She went home walking, much happier in mind and body.

This, he says, was one of several cases he has treated with honey, and he has always found it a very reliable and prompt medicament. If honey is not procurable at the time, a strong solution of sugar in water will be found a very effective and equally good substitute. He has also tried over-ripe plantains squeezed and applied as a poultice over the affected part, which acts speedily in subduing the pain and burning sensation. Apart from the prompt relief which honey or sugar affords the victims, it has the advantage of being easily procurable anywhere.

The Treatment of Labyrinthine Vertigo.—At a recent meeting of the Société française de laryngologie, otologie et rhinologie, a report of which appears in the *Gazette hebdomadaire de médecine et de chirurgie* for May 21st, M. Gellé stated that vertigo which was caused by lesions of the tympanum or of the annexa was very frequent. The treatment to be employed should tend to relieve pressure and to free the labyrinth with the use of a Politzer's bag, the catheter, rarefaction, etc. If the alterations had become established, then auricular surgery should be resorted to. If there was hyperæmia of the drum of the ear, paracentesis of the tympanum should be done, and this should be followed by baths of warm water prolonged in order to facilitate the flow of blood. Afterward pilocarpine or the iodides should be injected hypodermically. For a gouty patient, tincture of colchicum, colchicine, or sodium salicylate might be used. If there were cardiac troubles or albuminuria, a milk diet and intestinal revulsives rendered great service. If labyrinthine congestion was active, the treatment was the same as that for hæmorrhage; if it was passive, and connected with disturbances of the central circulation, the treatment should consist of a milk diet, the use of strophanthus, etc. Cold or steam baths should be avoided; also exciting mineral waters. Bromides and arsenic were indicated; cold douches were applicable only to the passive, neurasthenic forms.

Anæmia, said M. Gellé, caused vertigo, and if there was an aural lesion, the effects were more marked on the deaf side. The treatment to be employed, according to the pathogenic indications, consisted of the use of tonics, iron, some of the iodides, kola, and caffeine.

Inflammation of the internal ear was frequently very grave and often beyond medical resources. In the beginning, pilocarpine, quinine, and strychnine gave good results. If hereditary syphilis was suspected, a specific treatment might be tried.

Labyrinthine vertigo, said M. Gellé, might very frequently be attributed to a mechanical cause, such as shock, deglutition, centripetal pressure, mastication, congestion, etc. Hyperæsthesia of the labyrinth led to a predisposition to this cause, while at the same time a lesion of the organ exposed it to an abnormal concussion. The best medication was with quinine sulphate, of which nine grains might be given during the day, in three doses of three grains each at meal times. After a few days this quantity might be increased to eleven and twelve grains. This treatment could be repeated two or three times at intervals, according to the effect obtained, notwithstanding the buzzing it caused. A general quieting treatment might be employed at the same time. Paracentesis of the tympanum relieved the labyrinth, and in nervous persons cold douches hastened recovery.

Infectious diseases and toxæmia were often accompanied by vertigo and deafness, and in this case the treatment varied according to the pathogenic cause. Vertigo was often an early symptom of sclerosis and it was often mistaken for that due to disturbances of the stomach. It was also frequently caused by uterine, hæmorrhoidal, pulmonary, and psychical affections. The labyrinth, said M. Gellé, was like a manometer; it expressed the variations of the blood pressure and of the nervous system under the form of vertigo, buzzing, and hallucinations.

Poisoning with Pyrogallic Acid.—At a recent meeting of the Société médicale des hôpitaux, a report of which appears in the *Presse médicale* for May 23d, M. Dalché reported the following case: The patient, a man, twenty-three years old, had taken two hundred and twenty-five grains of pyrogallic acid, and shortly afterward felt a burning sensation in the stomach, and three hours later black vomiting set in. During the following days there was no vomiting, but a mild jaundiced condition appeared; the liver extended slightly beyond the false ribs, and the spleen was very large. There was a very watery diarrhœa, and the temperature was 101·1° F. The urine, which was rather abundant, was very dark, almost black, and it contained forty-two grains of albumin to the pint, and three hundred and sixty grains of urea. There was no sugar, but there were a few red blood-corpuscles, methæmoglobin, and oxyhæmoglobin.

Death occurred on the fourth day, and at the autopsy the following changes were found: The kidneys were large and black; the tubes were filled with refracting spheres, which were found also in the glomerular cavities. These spheres presented micro-chemical reactions which, said M. Dalché, enabled him to ascertain the presence of iron salts in their constitution. These spherical elements were not found in the blood-vessels, but in the capillaries and in the large veins coagulations existed under the form of maculæ or a network more or less thick.

These different lesions, said the author, indicated a profound modification of the blood; but the alterations which accompanied them were not at all comparable to those which were met with in the majority of cases of hæmoglobinuria, for the epithelium of the kidneys did not contain any pigmentary powder giving a ferruginous reaction. The greater part of the epithelium of the convoluted tubes and of the loops of Henle preserved nuclei readily stainable; further more, the epithelium had not exuded the spherical elements, and it was not furrowed with the cavities usually found in nephritis.

It might be concluded then, said M. Dalché, that there had been a profound alteration of the blood with globular destruction; but the renal lesions differed notably from those indicated as complications of hæmoglobinuria in general, and particularly of paroxysmal hæmoglobinuria.

Vivisection in the District of Columbia.—The American Pædiatric Society adopted on May 27th resolutions deprecating the passage of the bill before Congress for the prevention of cruelty to animals in the District of Columbia, and the

resolutions have been sent out with the indorsement of the following-named members:

J. C. Wilson, M. D., vice-president, Philadelphia.
Samuel S. Adams, M. D., secretary, Washington.
Rowland F. Greeman, M. D., New York.
Frederick A. Packard, M. D., Philadelphia.
William Osler, M. D., Baltimore.
A. H. Wentworth, M. D., Boston.
W. P. Northrup, M. D., New York.
J. P. Crozer Griffith, M. D., Philadelphia.
L. Emmett Holt, M. D., New York.
Charles W. Townsend, M. D., Boston.
J. Henry Fruitnight, M. D., New York.
George N. Acker, M. D., Washington.
C. G. Jennings, M. D., Detroit.
Augustus Caillé, M. D., New York.
A. D. Blackader, M. D., Montreal.
J. Seibert, M. D., New York.
Charles P. Putnam, M. D., Boston.
Floyd M. Crandall, M. D., New York.
T. M. Rotch, M. D., Boston.
W. S. Christopher, M. D., Chicago.
W. D. Booker, M. D., Baltimore.
Dillon Brown, M. D., New York.
John Dorning, M. D., New York.

Ichthyol and Mercurial Ointment in the Treatment of Gonorrhœa.—Dr. Ilinski (*Vratch; Therap. Woch.*, May 24th) reports seventy-two cases treated by him with ichthyol injections—fourteen acute and fifty-eight chronic. In the acute cases injections of a two- or three-per-cent. solution were given twice a day. In eight cases they were well borne and a cure was accomplished in from four to six weeks. In the six other cases the strength of the solution had to be increased to from four to six per cent. This caused slight burning, but it disappeared in half an hour.

In the chronic cases, after discontinuing the use of all astringent injections, the author used injections of a two-per-cent. solution of ichthyol, and irrigated the bladder every two days with a solution of boric acid. The strength of the ichthyol solution was increased gradually until it reached six per cent. This was well borne, only it caused a little burning. The discharge diminished and then ceased, but showed itself again when the injections were dispensed with. Then the author associated with the ichthyol treatment the employment of sounds smeared with the following ointment:

℞ Mercurial ointment..... 15 parts;
Lanolin, } each..... 8 "
Paraffin ointment, }
M.

The sound was introduced every second day and allowed to remain in the urethra from thirty to forty-five minutes. Perfect recovery took place under this treatment.

The author regards ichthyol as a valuable agent in the treatment of gonorrhœa, but remarks that the strength of the solution must be increased gradually.

The Relation of Hæmorrhage to Barometric Pressure.—In an article on this subject in the *British Medical Journal* for May 30th, Dr. Thomas Whitelaw draws attention to a symptom which, he says, in diseased conditions of the system may appear at the same time with an abnormally high barometric pressure.

His attention was attracted by the repeated coincidence of what are called "colliery warnings," appearing in the daily papers, with urgent messages to attend patients attacked with hæmorrhage from the lungs. The coincidences were so frequent, he says, that he could not avoid concluding that there was some connection between the one and the other. Time after time cases had arisen either immediately before he saw the "warning," or very often on the day that the public notice appeared. From these notices he naturally turned to the barometer, to learn that in almost every case the pressure of the atmosphere was exceptionally high.

At first his attention was taken up almost entirely by cases of hæmoptysis; but, as the apparent cause began to impress itself on his mind, hæmorrhages, less striking at first, arrested interest. From the observations he had made from time to time during the past few years, he came to the conclusion that there was a marked affinity between a high barometer and hæmorrhages of various kinds.

Dr. Whitelaw gives some particulars of recent cases which, he thinks, will bear out his statement in regard to the close relation that appears to exist between a high barometric pressure and the tendency to rupture of blood-vessels that are not in a healthy condition. It may be raised as an objection to his deduction that the cases quoted are mere coincidences; but, he says, when similar coincidences have occurred time after time during several years' observations, the conclusion drawn is a fairly justifiable one. It will be observed, too, that these hæmorrhages are very varied in character, and are consequently more significant.

He does not attempt to give a scientific explanation of how the atmospheric pressure, when abnormally high, produces such results. His reason for not essaying this task is that he is inclined to the opinion that there are other conditions of the atmosphere which, in concert with that of the atmospheric pressure, act on the body in such a way as to cause an unusual strain upon the vascular system. While he is fully alive to the importance of information upon these other states of the atmosphere, the unraveling of which he must leave to others, he will consider that the purpose of his paper has been attained should it have the effect of attracting the attention of the profession, especially those members of it engaged in general practice. To the latter, the fact that an examination of the barometer may often warn them of danger that menaces a patient should not be without its value.

It will be observed that there are no cases given bearing on surgical practice; but, if there is a stratum of truth in the subject, the observation should not be uninteresting to the specialist in surgery.

Poisoning with Arseniureted Hydrogen.—At a recent meeting of the Pathological Society of Manchester, a report of which appears in the *Lancet* for May 30th, Dr. Dixon Mann and Dr. J. Gray Clegg gave an account of five cases of poisoning with arseniureted hydrogen, three of which terminated favorably. They occurred in a manufactory where for trade purposes it was necessary to dissolve a considerable quantity of zinc in hydrochloric acid. The hydrochloric acid used at the time of the poisoning was found afterward to contain an excessive amount of arsenic as impurity to the extent of 0·309 per cent. of metallic arsenic. The zinc also contained arsenic in small amount. The symptoms were, briefly, pain in the back, vomiting, melæna, hæmoglobinuria, and jaundice. The post-mortem appearances were as follows: A broad, dark-blue line on the gums, ante-mortem clots in the heart and great vessels, œdema and congestion of the lungs, general bluish tinge of the omentum, hyperæmia of and petechiæ in the mucous membrane of the stomach and intestines, congestion of the spleen, slight enlargement of the liver, great swelling and congestion of the kidneys. On section the sub-

stance was found to be dark-red and the pyramids showed blue-black patches in their central parts. The bladder was contracted, and in one case it was empty; and in the other it contained about a drachm of fluid tinged red, in which were found kidney epithelium, fatty casts, albumin, and a trace of bile pigment. In the first case arsenic was found to be present in the liver, the kidneys, the bile, the urine, the blood, and in the fluid from the pericardium and the pleuræ. In the liver only was the amount sufficient to enable a quantitative estimation to be made; it equaled 0·002 gramme As_2O_3 for the entire viscus. In the second case arsenic was found in the kidneys, spleen, and liver, in which it equaled 0·0016 gramme As_2O_3. The microscopical preparations exhibited the following characters: Liver: The cells were swollen and cloudy, but the nuclei stained; there was no appreciable bile staining and no deposit of iron. Spleen: There were extensive congestion and slight fatty changes, with failure to stain in patches. Kidney: The glomeruli were swollen, the epithelium of the tubules was swollen and cloudy, and the nuclei did not stain; the blood-vessels were decidedly distended; and there were granular matter and blood in the tubules. Osmic acid preparations showed fatty granules in the cells of all the three organs.

The Ætiology and Pathogeny of Obesity.—In the *Union médicale* for May 2d there is an article on this subject by M. H. Richardière, in which he remarks that obesity is more frequent in women than in men. This predisposition in women, he says, is explained by their mode of life, which is generally sedentary, and by the influence of pregnancy and of the menopause. Obesity is more frequently observed in the inhabitants of northern countries than in those who live in the temperate or hot regions, and the majority of individuals in whom obesity often reaches monstrous proportions are found in northern countries. Among the Laplanders and the Eskimos this condition is due to the absorption of fatty foods which are taken in great abundance, the abuse of alcoholic drinks, and the sedentary life which they are obliged to live during the long winter months in habitations which are overheated and badly ventilated.

The inhabitants of hot countries, who live almost entirely in the open air and do not have an abundant diet, rarely grow fat. With regard to nationality, says M. Richardière, it has no influence in the production of obesity, for individuals from temperate or southern countries are apt to become fat when they remain for any length of time in northern countries and are subjected to the double influence of a sedentary life and an abundant diet.

Diet, he says, plays a very important rôle in this condition, and on this point all physicians are unanimous; but there are many opinions as to the nature of the foods which favor the formation and the accumulation of fat. The action of rich and fatty foods is evident, and all foods, whatever their composition, may contribute to produce fat.

With regard to water, says M. Richardière, it is generally admitted that, taken in large quantities, it is fattening; this, however, may be disputed. But with regard to alcoholic drinks, he says, there is no doubt that they contribute to obesity, for a large number of those who are addicted to such drinks become obese.

It has been stated that pregnancy and the menopause contribute greatly to the increase of obesity in women; in men the activity of the genital functions tends rather to prevent obesity. It may also follow a change in business life or in social duties, a change from an active life to a sedentary life, from a restricted diet to an abundant diet, etc. Sometimes it develops after an acute illness, such as pneumonia, and especially typhoid fever. Sometimes it follows after the apparent definitive arrest of pulmonary tuberculosis. In fact, many other causes may be cited to explain the development of obesity, says the author, but the pathogeny of this trouble of nutrition consists generally in the absence of oxidation of the fatty foods, and this is favored by want of muscular exercise.

Obesity, says M. Richardière, is essentially an affection of nutrition, and may be ranked with the diseases of nutrition. According to Bouchard, it is caused by the diminution of nutrition, which may be hereditary, and other diseases which also may be hereditary, such as biliary lithiasis, diabetes, gout, eczema, etc., have been demonstrated by Bouchard to be directly connected with obesity.

The Serum Treatment of Malignant Tumors.—In the *Province médicale* for May 23d there is a long and interesting article on experiments carried out by M. S. Arloing and M. J. Courmont. The authors deal with the effects of the injections of the juice of epithelioma or of sarcoma into the ass, with the action of the normal serum on malignant tumors, and with that of the serum of asses which have been inoculated with epithelioma juice. They also give a detailed account of their most important observations and the conclusions drawn therefrom, which are as follows: 1. Injections of the serum of asses which have been inoculated with epithelioma juice given in the region of malignant tumors are not alone capable of causing the disappearance of these tumors or even of preventing the generalization and the fatal issue of the disease. 2. These injections may be useful in bringing about a diminution in the size of the tumor for a short time, probably by a retrogression of the peripheral inflammatory zone. This action may be the origin of a temporary cure, if not of a definitive one, by making it possible to operate on a tumor which has been declared "inoperable" before the injections. More frequently it causes the disappearance, for a short time, of the symptoms of compression, such as pain and œdema. The general evolution of the disease will sometimes be arrested for several weeks. 3. Ass's serum thus prepared appears to contain toxic substances which do not exist in the normal serum. These substances accumulate in the organism, so that at a given moment they cause symptoms of reaction (in the cancerous at least), such as œdema, purpura, various eruptions, etc., near the punctures or even at a distance. These symptoms appear after the fifth injection, and they disappear at the end of a few hours or of a few days. They are frequently accompanied by general symptoms, such as a rise in temperature, anorexia, insomnia, etc. At the fifteenth injection the patients refuse to have the treatment continued. 4. With the normal serum of the ass, the same diminution in the size of the tumors is obtained, but the reactional symptoms which follow the injections of the "immunized" serum are never observed. 5. Subcutaneous injections of serum may be given in the region of "inoperable" tumors if, by so doing, it makes an operation possible by freeing the neighboring parts, or when the tumors are accompanied by pain or œdema due to compression. The normal serum of the ass is preferable to the "immunized" serum.

The Buffalo Academy of Medicine.—At the last monthly meeting of the Section in Surgery, on Tuesday evening, the 9th inst., the following papers on the subject of joint tuberculosis were presented: Its Pathology and Ætiology, by Dr. Chauncey P. Smith; its Symptomatology and Diagnosis, by Dr. Bernard Bartow; and its Prognosis and Treatment, by Dr. Jonathan Parmenter.

Lectures and Addresses.

A DEFINITION OF THE SCOPE OF ORTHOPÆDIC SURGERY, AS INDICATED BY ITS ORIGIN, BY ITS DEVELOPMENT, AND BY THE WORK OF THE AMERICAN ORTHOPÆDIC ASSOCIATION.*

By ROYAL WHITMAN, M. D.

A DEFINITION of the scope of that branch of surgery known as orthopædy is the more difficult because the derivation of the term, as well as its original application by its author, Andry, † refers to the prevention and treatment of the bodily defects and deformities of children only.

One is obliged, therefore, to define not what orthopædy means, but what its present application has come to be. Andry is sometimes called the father of this specialty, and there appears to be a very general misapprehension as to the object and scope of his book, published in 1741, in the title of which the name "*orthopédie*" first appears. This was in no sense a scientific work, even from the standpoint of that time. It was what might be called a nursery guide; in it were considered not only the common postural deformities, but, at much greater length, external defects and blemishes, as of the hair and skin, which could not be concealed.‡ It is emphasized again and again by this writer that the advice is intended only for parents and nurses, and that surgical aid is required for the proper treatment of the more serious distortions,# of which congenital dislocations are instanced.

The treatment of deformity has always been considered of special importance, and the subject has attracted the attention of many of those whose names are most distinguished in the history of medicine; the terms kyphosis, scoliosis, and lordosis date from the time of Galen, and suggestions of some of the forms of apparatus now in use may be found pictured in the ancient works on surgery.

At the time of Andry, and for long afterward, the treatment of deformity, of which distortions of the spine and clubfoot seem alone to have received serious attention, was practically limited to the use of apparatus.

At the beginning of the present century this treatment was to a great extent carried on in special institutions, and we may assume that at this time the ancient practice of mechanical treatment began to be known as orthopædic, although the use of apparatus is hardly mentioned by Andry Indeed, he may be considered as one of the earliest advocates of what was afterward known, in the animated discussions of the early part of the century, as the dynamic or developmental treatment, as opposed to purely mechanical methods.

Orthopædic surgery is a compound term which would seem to imply the addition of broader knowledge, and, therefore, more comprehensive treatment, to the ancient and limited practice of the early specialist.

In this broader sense the specialty of orthopædic surgery is modern, but it still feels the weighty influence of the old traditions, not only in the supposed limitations of its legitimate and necessary scope, but in the confounding of the means employed with the object to be attained. The application of a brace rather than the treatment of disease and deformity is still, in the minds of many, the distinctive and essential feature of the specialty.

The following definition, to be found in *An American Text-book of Surgery*, illustrates this point of view, and may therefore serve as a text for my remarks: "Orthopædic surgery has to do properly with the treatment of deformities and contractions, especially by some form or other of mechanical appliance; though of late its field has been somewhat extended, so as to include the consideration of many of the deformity-producing joint affections." The qualifying clause is of weighty significance, and it applies particularly to the practice of orthopædic surgery in this country, for here, where its importance has been more rapidly and generally recognized than abroad, it seems to have developed from a different standpoint, in that it was the desire to provide for the more effective treatment of the painful, dangerous, and deforming diseases of the bones and joints, now known to be tuberculous in origin, that led to the establishment of special hospitals and clinics, and thus afforded the opportunity for the study and treatment of disease and deformity, and for the evolution of the modern orthopædic surgeon.

As an example to the point, the objects for which the New York Orthopædic Dispensary and Hospital was established in 1866 are set forth as follows:

Objects of the Institution.—"To furnish treatment to the poor, with special reference to the diseases and deformities of the spine and hip joint and other of the more serious diseases of the bones and joints requiring surgical and mechanical treatment, and for giving instruction in the same."

This illustration is particularly applicable, because this institution is one of the few to which the distinctive name orthopædic was applied.

If one asks the student of to-day what orthopædic subject most interests him and of which he wishes first to learn, he will probably answer "hip disease"; and "hip disease" seems to the lay mind also to sum up in its familiar characteristics of danger, pain, and ultimate deformity, the type of the class of cases which demands that special knowledge and skill in treatment that the orthopædic surgeon is supposed to possess. Disease, then, that may lead to deformity has become of equal importance in the practice of orthopædic surgery with the treatment of actual deform-

---

* The President's address read before the American Orthopædic Association at its tenth annual meeting.

† "*L'Orthopédie ou l'art de prévenir et de corriger dans les enfans les difformités du corps.*" (From title page.)

"Quant au titre en question, je l'ai formé de deux mots grecs, sçavoir d'orthos, qui veut dire droit, exempt de difformité qui est selon la rectitude, et de paidion, qui signifie enfant" (Andry).

‡ "Je ne considère dans tous ces articles, que les défauts extérieurs. Je veux dire ceux qu'on ne sçauroit cacher."

"Le tout par des moyens à la portée des pères et des mères et de toutes les personnes qui ont des enfans."

ity, which was originally its end and aim, if not greater. When the better knowledge of disease pointed out the varying causes of deformity, and thus the possibility of its prevention; when the standpoint was changed from the treatment of effect to the study of cause, from an empirical to a scientific basis, the importance of deformity as an entity disappeared and the old limitation of the specialty became intolerable and impossible. The ancient specialist treated deformity by means of mechanical appliances; or, in the words of the definition, "orthopædic surgery has to do properly with the treatment of deformities and contractions, especially by some form or other of mechanical appliance." When causes were unknown the manner of treatment was of greater importance than the thing to be treated, and the manner of treatment still clings to orthopædic surgery as its essential feature. One constantly encounters this traditional faith in the efficacy of a brace *per se*, and in the teaching of students one's first care must always be to attack this popular fallacy and to relegate the brace to its proper place, as one of the means to be employed in the treatment of weakness and disease, a means whose use becomes apparent only by the study of cause and the knowledge of effect.

The exaggeration of a means or manner of treatment belittles the importance of the study of cause and effect, and in so far as it applies as a distinctive and limiting principle is not only inconsistent with scientific progress, but impracticable in rational treatment; and as an apt illustration of this fact, one quarter of the space devoted to orthopædic surgery under the definition which is the subject of this analysis is occupied by the descriptions of spasmodic wryneck, Dupuytren's contraction, webbed fingers, supernumerary digits, and clubhand, not one of which can be properly treated by any form of mechanical appliance.

Of the two hundred and eighty-four papers to be found in the eight volumes of *Transactions* of this association, but seventy-five are limited to the sixteen subjects that, according to this text-book, represent the scope of orthopædic surgery. Of the seventy-five, thirty-two are on clubfoot alone, and nineteen of these consider its operative treatment. One must conclude, then, that this section of a modern text-book represents the orthopædic surgery of a past time—of a time when its scope was limited to deformities and contractions, and when exclusive methods of treatment were opposed to one another, even within this narrow field.

It would seem that at the present day one need not multiply arguments to prove that any exclusive manner of treatment, however useful and however efficacious it may be in its proper place, for the individual practitioner, and as applied to selected cases, must be inefficient in the larger and more comprehensive field of the modern specialty. Its shortcomings and failures can only result in the voluntary or involuntary division of patients, in the separating into groups disabilities, diseases, and deformities that are absolutely one in cause and effect.

Those who see only the advanced and serious class advocate radical and unnecessary treatment for all, and those who limit themselves to the milder types may be ill prepared to combat the emergencies that may arise even in selected cases, or to modify a routine to meet the individual need.

The practical effect of this division, selection, and consequently ill-rounded experience has been to create and keep alive an antagonism fostered by a quicker perception of an opponent's failures than of the merits of his treatment. That such antagonism still exists is due, no doubt, to the traditions of that ancient time when ætiology and pathology were alike unknown, and the manner of treatment was of greater importance than the unknown cause which led to the condition.

I hope it has been made clear why the definition of Andry, by which he unwittingly limited the specialty to external deformity and to the treatment of children, is no longer adequate, and why the definition quoted from a modern text-book neither properly defines the term orthopædic nor indicates the scope of orthopædic work; it has even retrograded from the standard of our ancient prototype in that it makes a manner of treatment the distinguishing and limiting characteristic of modern scientific work.

Orthopædic surgery inherits an ancient name and the traditions of a still more ancient practice, but it is no longer bound to those traditions; it no longer separates deformity from its causes, or divides it into classes to fit it to a peculiar therapeutic method; but it now maintains, in common with other specialties, that the knowledge of cause and effect, modified it may be by practical experience and the individual needs of the patient, is the only safe and enduring standard upon which treatment may be conducted.

It is a very pertinent question in this discussion why orthopædic surgery is a specialty.

We may assume that in the past, as at the present time, it is because of the universal dread of deformity; in the past, as at present, because of the necessity for special knowledge of the use of apparatus that has always entered so largely into its effective treatment.

In more recent years the neglect of the chronic and deforming diseases of the joints gave it larger opportunity, and when advancing knowledge showed the curability of what was at one time considered hopeless disease, and the possibility of preventing and checking deformity by early diagnosis and timely treatment, its sphere of usefulness was still further extended. Finally, it is the time-absorbing character of the work that demands the infinite pains necessary to make hopeless deformity tolerable, to bring chronic disease to ultimate cure, and to search out the insignificant causes that may lead to pain and disability, that make it to-day, more than ever before, an important branch of surgery.

It is the mechanical specialty, but no longer in the old and narrow sense—mechanical because it has to do directly with the human machine. One must not only know the causes of disease, but he must become an expert in the statics and dynamics of this machine if he would hope to possess that scientific imagination that may predict effect from the knowledge of cause, and, thus foreseeing, guard

against it—a knowledge which is the very essence of prevention.

This represents the scope and function of modern orthopædic surgery, as I understand it, and as it is defined by the work of this association.

If a new definition or a new interpretation of the outgrown term orthopædic is needed, its first essential, it seems to me, should be freedom from the hampering qualifications that a former practice and tradition may have justified in the past. From the point of view that the object of orthopædic treatment is the cure or relief of the condition for which it is applied, and that the scope and compass of modern orthopædic surgery are best indicated by the work of this association, the following definition is suggested: *Orthopædic surgery is that division of surgery which treats of disabilities and diseases of the locomotive apparatus and of the prevention and treatment of deformities of the framework of the body.*

This definition would not claim for orthopædic surgery all the surgical diseases, deformities, and disabilities whose exclusion would burden it with qualifications. It claims for the orthopædic surgeon no special aptitude for the treatment of supernumerary digits, harelip, and crooked noses, which, with crossed eyes and stuttering tongue, were by Andry included under the title; but it would indicate that orthopædic surgery had especially to do with those deformities that affected the framework of the human machine, those diseases of the bones and joints that led to distortions of this machine, and those disabilities that especially concerned the functional use of the machine.

To illustrate the applicability of this definition to the daily work of the orthopædic surgeon, the following examples may be cited: Disability of the locomotive apparatus would include simple structural weakness, as well as local paralysis; it would also include the minor affections that cause pain and weakness, but not necessarily deformity, as illustrated in the *Transactions* by treatment of slipping patella, anterior metatarsalgia, non-deforming club-foot, and the like. Disease of the locomotive apparatus has a wide range, from tuberculous disease, on the one hand, to the acute infectious processes of the bones and joints that demand immediate surgical interference and which almost inevitably lead to deformity, on the other.

Prevention of deformity has two applications: not only the prevention of local deformity, the direct or indirect result of disease, but the prevention of deformity in its broader sense, by guarding the body during the growing period from the evil effects of carelessness and ignorance, as well as from unnecessary compensation for local deformity or disability.

Orthopædic treatment may be primarily mechanical and incidentally operative, as in the most important section of orthopædic work. It may be primarily operative, as for congenital dislocation of the hip; or secondarily operative, for the purpose of making apparatus unnecessary or less burdensome, as in the excision of a joint; or for the relief of paralytic deformity by arthrodesis or tendon grafting; and, finally, both apparatus and operation may be displaced in many instances by developmental training and by the avoidance of predisposing and exciting causes that would otherwise lead inevitably to weakness and disability.

As prevention of deformity is the present ideal in practice, so, other things being equal, the importance of its rapid correction is likely to be more generally recognized in the future. As the causes of deformity become better known, the principles of treatment will become clear and definite, and the means of applying these principles more simple and effective.

As the study of human mechanics in its broader sense is so important in the practice of orthopædic surgery, so mechanical treatment was, and still is, the most important means of treatment, and that there may be no misunderstanding on this point, all that has been maintained as to the benefit and the absolute necessity of the rest, correction, and protection that may be afforded by the brace is admitted; but it can not be admitted that the essence of orthopædic surgery is the manner by which disease and deformity may be treated, or that the orthopædic surgeon has any vital interest in the elevation of the practice of what has been called mechanicotherapy, or that this or any other useful means toward an end needs other advocacy than the evidence of its merits that advancing knowledge and practical experience shall demonstrate.

If the treatment of deformity ever fell into disrepute, it was not because of the use of apparatus, or because of the conditions for which apparatus was applied, for this class of sufferers has always appealed to universal sympathy; it was because of the unscientific exaggeration of a means of treatment; it was because of the theory that deformity was properly treated by apparatus, and not because apparatus was properly employed in the treatment of deformity.

The contributing field for orthopædic work is large, but the varying causes lead in effect to disability and deformity; thus the specialty differs from others that are limited to special organs or tissues in that it has a broader outlook and an ill-defined boundary; but this is not a disadvantage, since the object of a specialty is not the complete separation of one branch of medicine from another, but rather to provide the opportunity for the concentration of energy in a particular direction, and thus for the addition to the sum total of knowledge by more accurate observation, and for the acquirement of manipulative skill that can only come with constant practice.

An ill-defined boundary is rather an advantage, if thus, by more frequent contact with workers in other fields, we may escape the accusation of narrowness that is sometimes urged against special work, and of the truth of which our history may furnish instructive examples.

It is not to be expected that members of this association, attracted to orthopædic work by one or another of its many-sided aspects, who differ so widely in training, in environment, and in opportunity, will always agree, even on a common point of view.

It may be even a fortunate factor in the vigorous life of the association that its members differ with one another not only in the interpretation of the phenomena of disease, but as to the means by which it may best be treated,

and limit themselves, it may be, to one or another therapeutic method.

But this association, as the representative of modern orthopædic surgery, can be bound to no exclusive method or doctrine, for its object is to bring together and to concentrate individual effort in the search for truth, wherever this search may lead. On this account, if for no other reason, its charity must be broad enough to cover all the limitations in the aims and methods of its members, that it may provide a free and open field for discussion; for it is by the contests of opposing theories and methods that the underlying principles that govern and explain all treatment will come to light and will be established.

Original Communications.

THE MECHANICS AND TREATMENT OF THE BROKEN-DOWN FOOT.*

By ROBERT W. LOVETT, M. D.,
BOSTON.

This paper deals with the theoretical and practical aspects of a position of the foot which will be designated as "pronation," a name perhaps correct, perhaps incorrect, but arbitrarily assumed for purposes of discussion to designate a certain factor in connection with flat-foot and other affections of the arch of the foot.

By pronation I mean the combination of some degree of eversion of the sole with abduction of the forward part of the foot; the weight-bearing position of the foot as distinguished from the position of the foot at rest.

The attempt has been made to make an application of old and well-known principles, and to call your attention to points in the mechanics of the breaking-down foot which have been overlooked somewhat in the task of studying the mechanics of the foot already broken down.

The position of the foot at rest, the non-pronated foot, is assumed to be that where the line of the crest of the tibia, prolonged downward, passes between the second and third toes; the position where the inner border of the toe, the inner malleolus, and the inner surface of the condyle of the femur are all in the same vertical plane. These standards are, I think, universally accepted as correct for the foot bearing little or no weight. If weight is borne on the leg more and more until the whole body weight comes to the ground through one foot, a certain movement takes place which up to a certain point is normal, and beyond that point pathological. This movement is of the nature spoken of as "pronation," and is made manifest most obviously by an inward prominence of the internal malleolus. This symptom in severe cases is the one most often noted in growing children, while adults often are troubled by wearing out their boots on the inner side of the sole, and by noticing that they walk and stand too much on the inner border of the foot. The condition is sometimes spoken of as "weak ankles"; most often the milder grades of abnormity are wholly overlooked.

Excessive pronation—that is, abduction of the forward part of the foot, plus dropping inward of the inner malleolus (eversion of the sole)—is a necessary anatomical accompaniment of flat-foot; that is, of breaking down of the arch of the foot. Excessive pronation of the foot also accompanies contracted foot, which Dr. Shaffer speaks of as non-deforming clubfoot; and excessive pronation of the foot is a condition existing without any heretofore recognized change in the arch of the foot. This condition I venture to speak of as pronated foot, meaning really abnormally pronated foot, but abbreviating the term for practical purposes.

Fig. 1.—Photograph of the foot imprint in the "normal" position bearing little weight. (Through glass.)

Believing that this pronation of the foot varies more in proportion to the amount of pain suffered in flat-foot, contracted foot, and the foot with no change in the arch, than any other factor, I beg to call it to your attention as worthy of study.

The smoked tracing of the foot, or the imprint tracing of the foot made by any means, is unreliable for purposes of study, as I learned long ago from clinical experience, and lately it came in my way to find the reason for this. I am indebted to Dr. H. J. Hall, formerly house surgeon at the Children's Hospital, for the method used

* Read by invitation before the Orthopædic Section of the New York Academy of Medicine, April 17, 1896.

which was devised by him for the study of certain conditions existing in Pott's disease. The patient stands on a piece of plate glass supported between two tables, and the surgeon, looking up through, sees the line of contact of the foot with the glass as a dead white area where the pressure is greatest, and as a less anæmic area where the pressure is less. There is no difficulty in distinguishing the line of contact of the foot with the glass. With a crayon the observer draws on the lower side of the glass the outline of the foot in any position he chooses, with weight and without weight, and he notes the points of pressure. The patient steps off of the glass and a piece of moderately thin paper is then placed over the glass and a lamp or candle under it, by means of which the crayon outline can be seen through the paper, and so can be drawn on the paper for permanent record.

Tracings made in this way demonstrate plainly enough that there is one tracing for the foot in the normal position and another for the weight-bearing or pronated foot, and that the ordinary imprint tracing is a composite of the two, and I wish to demonstrate to you tracings and photographs of the weight-bearing foot by itself; for in imprint tracings

Fig. 2.—Photograph of the foot imprint in the weight-bearing or pronated position. Contrasted with Fig. 1, this shows that the weight-bearing surface has moved inward, and that the arch has narrowed. In this model the amount of pronation was not abnormal.

made in any other way the non-weight bearing tracing is indelibly recorded before the weight-bearing tracing can possibly be reached. The study of almost any smoked tracing will demonstrate this to you, for in it you will find two tracings laid over each other, heavier in the middle where they overlap, darker on the edges. It is possible that the study of the foot by this method may throw light upon some of the obscure problems connected with so-called "flat-foot," especially in its lighter grades.

Fig. 3.—Tracing of the foot taken through glass. The black outline is the normal and the broken line is the pronated position. The amount of pronation in this case was approximately normal.

In the foot held in the position described as normal, whether or not it is bearing weight, the chief points of pressure can be seen as white areas under the heel and beneath the third metatarsal. The arch bears, as a rule, some weight, but less than one would suppose, decidedly less than the heel and the distal ends of the metatarsals. The weight is plainly borne on the outer side of the foot. This is with the feet beside each other, neither one advanced, and with the model standing naturally, leaning neither forward nor backward.

If, now, the foot is pronated and the inner malleolus rolls in, the whole weight-bearing surface of the foot is seen to change and to move inward; the point of pressure under the heel varies but little, but the point of greatest pressure in front is likely to move inward until it is under the great toe in cases with much yielding. The behavior of the arch is curious and unexpected. It does not broaden often; it generally remains of about the same width as in the foot in the normal position, but simply moves inward; often it becomes narrower in the pronated foot, and in the pronated position it may be wholly lifted from the ground.

So much for the glass tracings. Next, as to the analysis of the movement by composite photographs. These pictures were made by a double exposure on a slow plate, one exposure for the normal and one for the pronated position.

Pronation as a movement has the following clinical features:

The toes remain practically stationary, while the whole leg rotates inward at the hip. Studied locally at the ankle, the features are these: The inner malleolus moves inward, downward, and backward; the outer malleolus forward, but not downward or upward; the whole foot rolls over somewhat to the inner side.*

That is, the whole movement consists in a rotation of the leg with regard to the toes, which are comparatively stationary. This affords a means of measuring the amount of pronation, a most desirable matter for its accurate study, especially as the smoked tracing is worthless.

In the normal foot in the non-weight-bearing position

* Cf. Golebiewski. Studien über die Ausdehnungsfähigkeit des menschlichen Fusses. *Zeitsch. für orth. Chir.*, Bd. iii, S. 2 and 3.

—that is, when the inner border of the toe, the inner malleolus, and the inner condyle of the femur are in the same vertical plane—the following equilateral triangle may be constructed: A line is drawn from a point in the cleft between the third and fourth toes to the middle of the internal malleolus. This line in the normal foot should be exactly equal in length to a line drawn from the same point between the third and fourth toes to a point at the posterior quarter of the external malleolus. The measuring can be done with an ordinary tape measure between points marked with the ordinary fountain pen.

If now the foot is pronated, the inner malleolus moves backward, the outer malleolus forward, while the point

Fig. 4.—A composite photograph of the normal and pronated positions of the left leg. This shows that in pronation the whole leg rotates inward on a vertical axis, while the toes remain stationary, as shown by the excursion of the longitudinal line.

between the toes is comparatively stationary, and in the weight-bearing position the line to the inner malleolus is decidedly longer than the line to the outer. If this variation does not exceed one twenty-fifth or thereabouts of the shorter measure, it may be considered as the normal amount of pronation, whereas from one twentieth up to one seventh, which is the highest grade that I have measured, is the accompaniment of more or less serious deformity,

Fig. 5.—Composite photograph showing that the cross over the inner malleolus in pronation moves downward and backward.

sometimes with flattening of the arch, sometimes without it.

For instance, in a non-weight-bearing foot the measures might be as follows:

	Without weight.	With weight.
From point at toes to internal malleolus....	6	$6\frac{1}{8}$
" " " " outer " ...	6	$5\frac{7}{8}$

Difference, two eighths of an inch. Two eighths of an inch is divided into five and seven eighths, which shows the variation to be one twenty-fourth of smaller measure—only a normal amount.

If the variation were as follows it would be pathological:

	Without weight.	With weight.
From toes to inner malleolus.....	6	$6\frac{1}{4}$
" " outer "	6	$5\frac{3}{4}$

Difference, two fourths, which is one thirteenth of smaller measure—a pathological amount.

The real application of the method should be this: The patient's foot should be bared and a point marked

with ink between the third and fourth toes, over the middle of the inner malleolus, and at the posterior quarter of the external malleolus. By first marking the points in every case and verifying the equal length of the lines on the foot held in the normal position before allowing it to fall into the pronated position, error may be avoided.

FIG. 6.—Composite photograph showing that in pronation the inner malleolus moves forward.

Methods of measurement which record only the descent or inward excursion of the inner malleolus are incorrect unless they also take into consideration the size of the foot. For the descent of a quarter of an inch is a very different matter in a foot six inches long from what it is in one of twelve inches.

Finally, I wish very briefly to speak of the anatomical character of this movement of pronation, and I wish to express my indebtedness to Professor Thomas Dwight for his assistance in the study of the movement in the cadaver and on anatomical preparations.

The hip rotates inward, the knee does not participate to any noticeable degree, nor does any lateral movement occur between the astragalus and the malleoli. The movement occurs chiefly between the astragalus and the os calcis, and between these two bones and the scaphoid and cuboid at the medio-tarsal joint, so that the movement really is not to any degree in the ankle, if we mean by that term the astragalo-tibial joint, but in the joints of the foot and at the hip.

It is not possible to analyze accurately any one movement or series of movements in the tarsus, so excessively complicated and so associated with one another are they. Any one who presumes to do so is assuming to do something which is not practicable, on account of the many joints and thier complex surfaces. Consequently it is only possible to state in a general way why abduction of the forward part of the foot and eversion of the sole are necessarily anatomically associated with each other, and why either one can not occur alone. The observations were made by having the model stand with the feet side by side, neither one being advanced, and but slightly separated.

The plane of the medio-tarsal joint is not at right angles to the long axis of the foot, but slants outward and backward. Consequently, movement there which allows lowering of the inner malleolus necessarily at the same time abducts the forward part of the foot. Suppose for a moment that the tibialis posticus, which anatomically seems to be the chief support of the astragalus from rolling inward, becomes tired, and with its accompanying muscles relaxes. The astragalus and the leg moving as one bone rotate inward on a vertical axis and the astragalus tips its forward end downward, movement at the medio-tarsal joint occurs, and the foot abducts at the same time that it everts; the scaphoid after a little movement between the astragalus and itself moves downward, and its outer end lying above the cuboid, it strikes against it and the whole foot rolls still farther over on this account.

FIG. 7.—The triangle for the estimation of the amount of pronation.

In short, abduction and eversion are clinically and anatomically associated of necessity, and the prevention of one is the prevention of the other, and of all changes leading to pronation and flat-foot. This can be demonstrated as well in the cadaver or in the wet anatomical preparation as in the living foot.

It was interesting to note in experimental work leading up to this paper that the amount of pronation increased with fatigue. A professional model with an average foot

showed at the end of three hours' standing double the amount of pronation that was measured at the beginning.

If you will analyze in your mind the various methods of treating flat foot, you will see that the plate, the pad, the raised inner half of the sole, the brace with a pad or strap over the inner malleolus, all aim at the prevention of eversion of the sole of the foot, which is represented by dropping of the inner malleolus. But I am not here to discuss so much the treatment of flat-foot as its prevention by the treatment and prevention of excessive pronation.*

Fig. 8.—A composite photograph showing normal and pronated positions of the foot.

First in order comes the use of a proper boot, a boot of the same shape as the human foot, a boot for children with a straight inner edge, a boot for adults to hold the forward part of the foot adducted. For the problem of preventing pronation may be solved in many cases by preventing abduction of the forward part of the foot and not considering the prevention of the dropping of the inner malleolus (eversion of the sole) by any other means.

The essentials of this boot are these:

1. The front part should be strongly adducted.

2. The front part, opposite the metatarso-phalangeal joint, should be as wide in the sole as the weight-bearing foot.

3. The shank should be stiffer and higher than usual and not cut away too much inside. In other words, it should afford real support to the arch of the foot.

4. The inner border of the shoe should be as straight as the condition of the great toe will permit, in order to allow the great toe freedom to support the inner border of the foot in its proper position.

At my original inspection of patients with pronated feet, if they show a degree of pronation exceeding one twenty-fifth or one thirtieth of the shorter measure, I have the soles and heels of their boots made an eighth or a quarter of an inch thicker on the inner side, whether or not they complain of discomfort in the feet from the pronation; the aim being to raise the inner border of the foot until the malleolus falls back into its proper place, and thus the eversion element of pronation is combated as well as the abduction element. If the feet have become painful and must be used, I put a felt pad under the arch of the foot, have the patient douche the feet at night in hot and cold water, and bandage them with a flannel bandage each night. If this does not give relief, I apply sticking plaster in the method described by Dr. Gibney to hold up the arch of the foot, or I apply metal plates, which I am inclined to think the surest method of affording immediate relief. Plates, as a rule, I only apply as a means of temporary support, hoping to dispense with them later and to substitute muscular support for them. Patients with abnormally pronated feet are directed to walk on tiptoe and to practise adduction of the forward part of the foot against resistance.

I need not comment on the evil effect of the ordinary woman's boot. If one desired to invent a boot calculated to throw the foot over on to its inner side and weaken the muscular support, he would select a boot with a pointed toe, having the point near the middle of the foot; the sole should be narrower than the foot in front; the shank should be weak and cut away inside, and the forward part should not be adducted upon the posterior part. Such a boot crowds the great toe outward and removes a buttress which keeps the inner border of the foot from rolling over. It crowds together the ends of the metatarsals and in general favors both eversion and abduction. The earlier in life such a boot is worn, the greater the harm.

In short, I believe that pronation, with or without flattening of the arch, is the factor to study, and that its prevention and its cure are the prevention and cure not only of flat-foot, but of the painful affection without breaking down of the arch which I speak of as pronated foot; that the selection and use of proper boots will cut down very much the use and need of mechanical appliances. And lastly, I wish to call to your attention the fact that all the work above described has been founded upon the assumption that *eversion of the foot and abduction of the forward part of it are necessarily anatomically associated*, and that the prevention of one is the prevention of both.

* Marcinowski. *Zeitsch. f. orth. Chir.*, Bd. iv, H. 1, S. 68.

THE TECHNICS OF THE TRIAL CASE; OR, SUBJECTIVE OPTOMETRY.

By A. EDWARD DAVIS, A.M., M.D.,
INSTRUCTOR IN DISEASES OF THE EYE, NEW YORK POST-GRADUATE MEDICAL SCHOOL; ASSISTANT SURGEON, MANHATTAN EYE AND EAR HOSPITAL, ETC.

After we have subjected the eye to one or more objective tests, we finally make use of the trial lenses and test cards before prescribing glasses. It is the exact *method* and *order* of procedure in placing the lenses in the trial frames in refracting cases that I wish chiefly to call attention to in this article.

Simple cases of hyperopia and myopia are, as a rule, easily fitted to glasses; but a certain definite way should be followed even in these cases. It is the astigmatic cases that give most trouble, and among these, as is well known, the compound hyperopic and mixed astigmatisms are the most difficult to fit.

Astigmatism is the thing of most importance in correcting errors of refraction, and I invariably correct the astigmatism first, unless there is a large amount of spherical error present—a myopia of eight dioptres or more, or a hyperopia of six dioptres or more—with only a small amount of astigmatism. In such cases part of the spherical error is first to be corrected, in order, if possible, to bring up the vision sufficiently so that the eye will appreciate any further change in acuity of vision when a weak cylindrical glass is placed in front of it.

I always begin my test by putting on *plus* glasses; plus cylindrical glasses if the lines on the clock dial (Green's) indicate astigmatism, plus spherical glasses if astigmatism is absent, and for the following reasons: First, since we have not used any objective methods, we do not know if the patient is hyperopic or myopic. If the patient happens to be hyperopic, plus glasses are accepted, as a rule, if begun with; however, if minus glasses are first tried, the patient many times accepts them, especially if the error is of low amount, though the patient is really hyperopic. This fact is so well known that it is hardly necessary to more than simply allude to it. The eye instinctively makes an effort to overcome minus glasses when placed in front of it; the ciliary muscle is thrown into a spasm of accommodation, producing an artificial myopia, which the minus glass partly or wholly corrects, and in this way apparently improves vision. The mere fact that a patient accepts minus glasses is no indication whatever that he has myopia. Furthermore, minus glasses should never be tried until plus glasses have been tried, unless we know beforehand that the patient is really myopic, for, as pointed out above and as will be demonstrated farther on in this paper, they tend to incite a spasm of accommodation, the very thing we wish to avoid.

The thing of next importance to plus glasses in beginning a test is that we shall begin with the *weakest* lenses in the trial case and go up gradually. I do this also to avoid spasm of accommodation, for by adding a quarter of a dioptre at a time the eye accustoms itself to it and the ciliary muscle relaxes gradually if it is only given a chance. Should all, or almost all, of the correction be put on at once, however, the change for the eye is so sudden and marked that it will not adjust itself to it; whereas, had the glasses been gradually increased in power, the ciliary muscle would have relaxed. This is my experience, and I believe it accords with that of the great majority of observers.*

By following this plan spasm of accommodation, if present, can in the great majority of cases be overcome, and if not present, the liability of causing it be avoided. Certainly a great gain by a very simple method.

Another method of avoiding spasm of accommodation, and one well known among oculists, is to correct both eyes at the same time.

A few concrete cases will serve better to demonstrate the method and order of a subjective examination with the trial case, test cards, and clock dial than anything else.

First Proposition.—A patient placed twenty feet from the test cards and clock dial sees $\frac{20}{20}$ (Snellen) in each eye, and the horizontal lines of the clock dial plainest.

If there is no spasm of accommodation present, this indicates that we have a hyperopic astigmatism, simple or compound, or a mixed astigmatism with the hyperopic portion greater than the myopic portion, all with the rule; or a myopic astigmatism, simple or compound, or a mixed astigmatism with the myopic portion predominating, all against the rule. A glance at diagrams 1, 2, 3, 4, 5, and 6

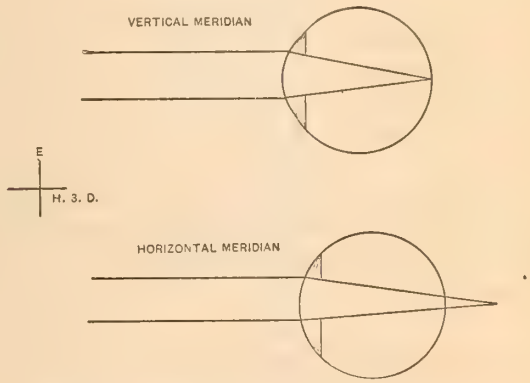


FIG. 1.—Simple hyperopic astigmatism with the rule.

will show this, the lines that are seen plainest always corresponding to the meridian of greatest error of refraction, as should be. The vertical meridian of the cornea is emmetropic, or more nearly so than the horizontal meridian in all the above-mentioned cases, and, as the horizontal lines

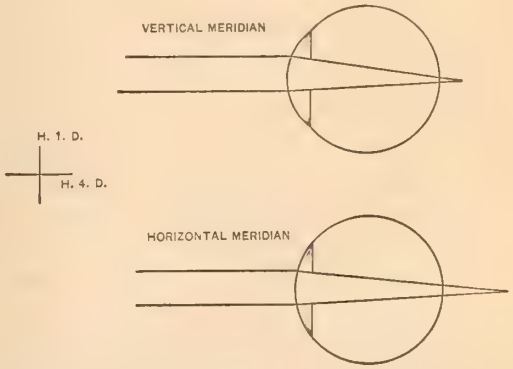


FIG. 2.—Compound hyperopic astigmatism with the rule.

on the clock dial are seen by the rays of light passing through the vertical meridian of the cornea, it follows as a consequence that those lines on the dial are seen plainest. But we are to decide which one of the above six conditions is present.

* Some oculists, however, resort to putting on very much too strong plus glasses to get rid of spasm of accommodation. By beginning the test with very high plus glasses they blur the vision completely, and in that way take away the desire to accommodate for or fix on any object. Then, by gradually diminishing the power of the glass, the correct glass is finally accepted. For myself, I much prefer to begin with the weakest and work up.

First Step.—Put a + 0·25 D. cyl. ax. 90° (which is at right angles to the lines seen plainest on the dial, according to our first proposition) in front of the eye. If this improves his vision for the test types, or even does not

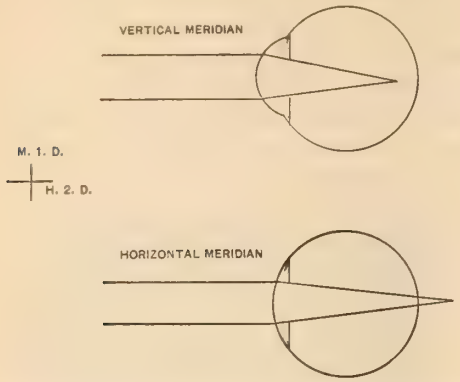


Fig. 3.—Mixed astigmatism with the rule, hyperopic portion predominating.

make it worse, and at the same time brings out the vertical lines on the dial plainer, or makes them no dimmer, I add the next stronger plus cylindrical glass—a + 0·50 D. cyl., ax. 90°. If this improves both the vision and the lines I keep adding plus cylindrical glasses, a quarter of a dioptre stronger each time, until they begin to make him see worse. The strongest plus cylindrical glass that gives the best vision and at the same time brings out the lines on the clock dial with equal clearness is the proper glass. According to Fig. 1 this would be a case of simple hyperopic astigmatism, and the patient should obtain the best vision he is capable of having with a + 3 D. cyl., ax. 90°.

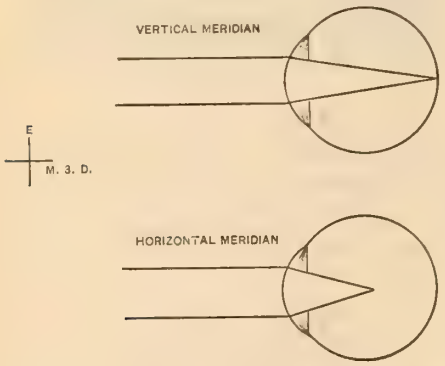


Fig. 4.—Simple myopic astigmatism against the rule.

Second Step.—Say, however, when we reached a + 3 D. cylindrical glass that the lines on the dial were of an equal clearness, but that the vision of the patient was not perfect. The next, or second step, is to put on the weakest plus spherical glass in front of the cylinder to see if the patient has any manifest hyperopia in addition to his astigmatism. If he accepts the weakest glass, and that with improvement, continue to add plus spherical glasses, a quarter of a dioptre stronger each time, till they begin to make the vision worse. Say a + 1 D. spherical glass gave him the best vision. This would be a case of compound hyperopic astigmatism, as represented in Fig. 2. Of course, the patient might have latent hyperopia in addition to the manifest, but, as a rule, unless marked (2 D. or more), it rarely calls for correction, a point especially emphasized in Roosa's writings.

Third Step.—If a plus cylindrical glass improves but does not give perfect vision, and a plus spherical glass in addition does not continue to improve the vision as in the second step, a mixed astigmatism is to be suspected. The next or third step is to begin with the weakest minus cylindrical glass at right angles to the plus cylindrical glass. If this improves the vision and at the same time makes the lines on the clock dial plainer and more nearly equal, continue to add stronger minus cylindrical glasses till the weakest minus cylindrical glass that gives the best vision and renders all the lines on the clock dial equally clear is reached. Say in the above example a + 2 D. cyl., ax. 90° ⊂ − 1 D. cyl., ax. 180° is accepted. This would indicate a mixed astigmatism with the rule, as represented in Fig. 3.

It will be noticed in this case that all of the lines on the clock dial are first equalized in clearness of outline by

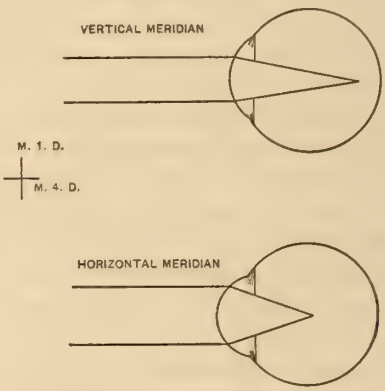


Fig. 5.—Compound myopic astigmatism against the rule.

a plus one-dioptre cylindrical glass, though all of them remain dim. This is simply from the fact that a plus one-dioptre cylindrical glass allows the rays of light going through the horizontal meridian of the cornea to focus one dioptre behind the retina, the same distance the rays going through the vertical meridian focus in front of it, consequently a perfect diffusion circle is formed on the retina.

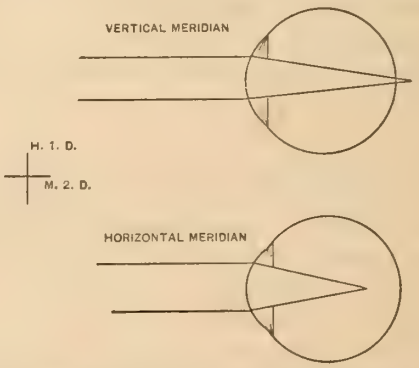


Fig. 6.—Mixed astigmatism against the rule, the myopic portion predominating.

When a greater than a plus one-dioptre cylindrical glass is added, the vertical lines on the dial are brought out plainer than the others, and remain plainer till the test is com-

pleted, when they all appear equally clear and the vision is brought up to the best possible to be obtained.

Fourth Step.—If the patient will accept no plus glass at all, the fourth step is to begin with the weakest minus cylindrical glass, axis at right angles to the lines seen plainest, or at 90°, as it might prove to be a case of myopic astigmatism against the rule. If the — 0·25 D. cyl., ax. 90° improves the vision and at the same time brings out the vertical lines of the clock dial plainer, continue to add minus cylindrical glasses, increasing their strength gradually until the weakest minus cylindrical glass is reached that gives the best vision and equalizes the lines on the clock dial. If the vision is made perfect by this cylindrical glass—say it is — 3 D. cyl., ax. 90°—it is useless to add minus spherical glasses in addition, because the mere fact that he sees perfectly shows that he has no myopia in addition to his astigmatism, for no myope can see perfectly or have vision equal unity. The above case, therefore, according to the glasses accepted, would be simple myopic astigmatism against the rule, as shown in Fig. 4.

Fifth Step.—Should the — 3 D. cyl., ax. 90° bring out all the lines on the dial with equal clearness, but not give perfect vision, then the weakest minus spherical glass is to be placed in front of the cylindrical glass. If this improves vision, continue to add minus spherical glasses till the best vision of which the patient is capable is obtained, being careful to stop with the weakest spherical glass that gives the best vision. Say a minus one-dioptre spherical glass is accepted in addition to the minus cylindrical glass. If no spasm of accommodation exists, this would indicate compound myopic astigmatism against the rule, as demonstrated in Fig. 5.

Sixth Step.—If a minus cylindrical glass (say a minus two-dioptre) improves but does not give perfect vision, and a minus spherical glass, in addition, does not continue to improve the vision, as in the fifth step, a mixed astigmatism may be expected. Especially may it be looked for if the vertical lines on the dial are now left plainer than the horizontal ones by the simple minus cylindrical glass alone. The next step is to place a weak plus cylindrical glass at right angles to the minus cylindrical glass. If this improves vision, continue to add plus cylindrical glasses till the strongest plus cylindrical glass that gives the best vision and renders all the lines on the dial equally clear is reached. Say this is a + 1 D. cyl., ax. 180°. This, combined with the — 2 D. cyl., ax. 90°, would indicate mixed astigmatism against the rule, as shown in Fig. 6.

Second Proposition.—A patient placed twenty feet from the clock dial sees the vertical lines on the dial plainest.

This indicates a hyperopic astigmatism, simple or compound, or a mixed astigmatism with the hyperopic portion greater than the myopic portion, against the rule in each case; or a myopic astigmatism, simple or compound, or a mixed astigmatism with the myopic portion greater than the hyperopic portion, with the rule in each case.

The *six steps* to be followed under this second proposition are similar in principle to those followed under the first proposition. Always begin with the weakest plus cylindrical glass, placing its axis at right angles to the lines seen plainest on the clock dial,* and follow successively the six steps outlined under the first proposition.

In cases of simple hyperopia or myopia, where neither plus nor minus cylindrical glasses are accepted, plus and minus spherical glasses are to be tried in turn, always beginning with the weakest and gradually increasing till the strongest plus or the weakest minus spherical glass is reached which gives the best vision.

The entire subject may be recapitulated in four brief sentences, viz.:

1. Correct the astigmatism first, if present.

2. Always begin the test with a *plus* glass and a *weak* plus glass, and *gradually* increase the strength, in order to avoid or overcome spasm of accommodation, bearing in mind to place the axes of cylindrical glasses at right angles to the lines seen plainest on the clock dial.

3. Place the lenses in the trial frames in the following order, viz.: First, plus cylindrical glasses alone; second, spherical glasses in addition; third, minus cylindrical glasses at right angles to the plus cylindrical glass, if vision is not made perfect by a plus cylindrical glass alone and plus spherical glasses are not accepted in addition; fourth, minus cylindrical glasses alone; fifth, minus spherical glasses in addition; sixth, plus cylindrical glasses at right angles to the minus cylindrical glass, if vision is not made perfect by a minus cylindrical glass alone and minus spherical glasses are not accepted in addition.

4. If no astigmatism is present, plus spherical glasses are to be tried first; if not accepted, then minus spherical glasses.

Mydriatics are rarely ever called for, if the above method of procedure is followed out.

I am aware of the fact that this method, as outlined by me, is contrary to that recommended and practised by some eminent men of to-day. Instead of considering every case as hyperopic to begin with, they prefer, if the case is not already one of myopic astigmatism,† to convert it into such by means of spherical glasses.

Secondly, they recommend that the meridian of least refraction be corrected first and with spherical glasses. They propose to do this by having the patient look at the lines on the clock dial first and before letting him see the test types; to put on minus spherical glasses till some one of the lines on the clock dial is distinctly seen, or to put on plus spherical glasses as long as any one of the lines on the dial remains clearly seen.

Thirdly, when astigmatism is combined with any spherical error, they recommend that the astigmatism be fitted first.‡

With the third recommendation I am in hearty accord, as the tenor of this paper shows. The other two recom-

* The exception to this is where there is a mixed astigmatism, with or against the rule, with the myopic portion predominating. In such cases, if we begin with a plus cylinder, we must place the axis of the cylinder parallel with the lines seen plainest on the clock dial. See Fig. 6 as an example.

† Of course, cases of simple myopia and hyperopia are not considered here.

‡ See paper on this subject by George J. Bull, *Ophthalmic Review* London, September, 1895.

mendations I think unnecessary, illogical, and ill-advised, and for the following reasons:

First, in cases of compound myopic astigmatism, if the meridian of least refraction is fitted first by spherical glasses, according to their second recommendation, they must necessarily fit the spherical part of the error first, instead of the astigmatism first, as directed by their third recommendation.

Second, in order to convert a simple or a compound hyperopic astigmatism or a mixed astigmatism into a myopic astigmatism it is assumed that the meridian of least refraction will accept a spherical glass up to the full amount of error, which assumption is not so by any means, especially as regards plus spherical glasses. For example, take a hyperopia of two dioptres with an astigmatism of one dioptre with the rule. In such a case a plus three-dioptre spherical glass is requisite to correct the meridian of least refraction, it at the same time over-correcting the other or vertical meridian by one dioptre. This over-correction then, according to their plan, is to be corrected by a minus one-dioptre cylindrical glass, axis at right angles to the lines seen plainest on the clock dial. It has been my experience, however, that these patients will not accept the full correction for the meridian of least refraction; but a certain amount of hyperopia remains latent, and this without any evil effect in many cases. If we first correct the astigmatism in such cases without converting it into myopic astigmatism, the remaining hyperopia can easily be tested by the simple addition of spherical glasses. If they are accepted, very well; if not, leave it alone, unless it is excessive in amount.

Incidentally, in closing this paper I may add that where the astigmatism has been ascertained beforehand by any of the objective methods, the subjective method outlined in this paper can be followed with even more satisfaction than when depended upon alone; and of the three objective methods—ophthalmometry, retinoscopy, and ophthalmoscopy—I much prefer that of ophthalmometry, for the following reasons: First, it is much the quickest; second, it is the most accurate; third, it does not dazzle the eyes as do the other two, by having light thrown into them, which is a very important factor. After light is thrown into the eye for any length of time it dazzles it in exactly the same way, but to a less extent, that the sunlight does when reflected from the snow, and impairs any subjective test immediately following.

THE GENERAL TREATMENT OF SYPHILIS IN PRIVATE PRACTICE.*

By RAMON GUITÉRAS, M. D.,
PROFESSOR OF ANATOMY AND OPERATIVE SURGERY IN THE NEW YORK POST-GRADUATE MEDICAL SCHOOL; VISITING SURGEON TO THE CITY AND COLUMBUS HOSPITALS.

This can be generally considered in about three lines, and as follows:

For the first stage, the initial lesion, cauterize if necessary, and dress with aristol, iodoform, or calomel.

For the second stage, prescribe pilula hydrargyri protiodidi, from a third of a grain to a grain three times a day for the first year, and "mixed treatment" for another year.

For the third stage, if it occurs, employ "mixed treatment" alone, or with fifteen grains of iodide of potassium three times a day, the iodide to be increased if the lesions are serious, and use mercurials locally.

This may be all that is necessary for ordinary attacks, which generally do not go beyond the secondary stage, and where there are no complications.

We find, however, in treating this disease that there are often complications, and that different forms are treated best by certain methods.

Primary Syphilis.—Let us first consider primary syphilis, or the initial lesion, more in detail. This may occur purely as such, or infected with a chancroidal virus as a mixed sore.

What is the difference between the two? It is mainly this, that the mixed lesion develops more quickly after exposure, and appears in the form of a chancroid, which later on becomes infiltrated, and takes on the character of a chancre. This is generally of an ulcerating form.

The initial lesion of syphilis, on the other hand, appears later, from two to six weeks after exposure, and is not so apt to ulcerate. It might be well, then, to consider hastily the treatment of the mixed sore before beginning to consider that of the syphilitic initial lesion.

The mixed sore, as it appears as a chancroid, should be treated as such. It should be washed two or three times a day with warm water, and then covered with a bland antiseptic powder and a pledget of cotton. If the ulceration seems to have increased on the second visit, it should be touched with silver stick, or a saturated solution of nitrate of silver, and afterward treated as before. This should be repeated on subsequent visits if necessary. These sores are rebellious, and gradually infiltrate and take on the form of a chancre, or modified chancre, when they should be treated as such.

What, then, is the treatment of a chancre proper, or simple chancre? In answer it may be said that it is best treated according to the form which it has assumed. It may be a dry, scaling papule, a superficial erosion (the most common form of uncomplicated chancre), or an ulcerating initial lesion (the Hunterian chancre).

In almost every case of common chancre or initial lesion that comes to me as such, the treatment is the same, and is usually attended with success. It is generally of the form of a simple erosion or ulceration.

If the former, the patient is directed to wash it two or three times a day, and to dust on a mild antiseptic powder, consisting of boric acid, bismuth subnitrate, and calomel, equal parts, and afterward to put on a thin layer of absorbent cotton to absorb any discharge.

If the ulcerating form, first cauterize it with a saturated solution of nitrate of silver, and then dress it with the above-mentioned powder in a similar manner.

If it is the dry, scaling papule, I treat it generally with a wet dressing of black wash. A thin film of cotton spread over the lesion and kept moist by pouring this solution

* Read before the Alumni Society of the City Hospital, April 1, 1896.

upon it is usually sufficient. This form of chancre is often at the balano-preputial margin in cases where this is somewhat constricted, and in such cases an ointment of the ammoniate of mercury, alone or diluted, is often more efficacious than the solution.

Powders of iodoform, aristol, or calomel are used by many, but to me the above-mentioned powder seems to be the best. Iodoform is foul smelling, aristol is not so effective, and calomel alone is occasionally irritating.

In the combined powder above mentioned, there are the antiseptic qualities of boric acid, the astringent and healthful action of the bismuth subnitrate, and the antisyphilitic action of the calomel. This powder is therefore very satisfactory when the lesion is situated on the glans or on either side of a retractible prepuce, or on the body of the organ. It can not be used, however, in cases where it lies beneath a non-retractible prepuce, or, in other words, in a case of a subpreputial lesion. These subpreputial lesions are often found in individuals where the foreskin had been previously retractable, but where the infiltration of the lesion was sufficient to prevent its retraction, and therefore what was a simple lesion when it was in a situation where it could be freely exposed became much more inflamed when confined beneath the prepuce and irritated by the accumulation of smegma and its own secretions. In these cases there is often quite an amount of subpreputial discharge and considerable induration, as felt through the prepuce.

The object to be attained in treating such a condition is to keep the lesion as clean as possible, and to make a healing application by the best means that can be employed. Here, of course, without an operation, we can not first apply powders and absorbent cotton, or cauterize if necessary, and at the same time it is not advisable to resort to the knife if a cure can be obtained without doing so.

The method, therefore, first to be tried is that of a subpreputial astringent or antiseptic injection. This should be given every three or four hours after first injecting plain water to cleanse the parts. The materials usually used are a weak solution of carbolic acid (1 in 250) or of bichloride of mercury (1 in 10,000), or blackwash. Apparently enough of this injection remains in contact with the lesion to encourage a healing process, or to reduce the surrounding inflammatory conditions to such a degree that the prepuce can be retracted.

If, however, under such treatment, the condition seems to grow worse instead of better, a dorsal incision should be made through the entire thickness of the prepuce, and, after a thorough bichloride irrigation, the lesion should be cauterized and then treated by a local application of a powder or solution and absorbent cotton, as before referred to. This should be followed later on by a circumcision.

Chancre of the meatus occurs in about six per cent. of the cases of initial lesion in the male. It is usually in the form of an erosion, and is very obstinate on account of being constantly irritated by the urine passing over it. In these cases a powder is too irritating to apply, and a solution seems to produce the best results. Here, again, lotio nigra appears to be preferable, and should be kept in constant relation to the lesion by means of an absorbent cotton plug saturated with it, a fresh one to be inserted after each act of micturition, and to be worn until the next act, when another one should be inserted. In addition to this, an alkaline solution should be given internally to render the urine less irritating.

Extragenital chancres, which occur in two per cent. of all cases (according to Julien), are treated in the same manner as those on the genitals—*i. e.*, cauterized when necessary, and treated with mild antiseptic or astringent washes or powders.

Sometimes phagedenic ulceration occurs in chancres. This, however, is extremely rare in private practice, usually occurring only in the lowest class, or hospital patients in the large cities. In such cases the slough must be first removed by means of a powder of equal parts of charcoal and iodoform, or a charcoal poultice, or by an application of the peroxide of hydrogen, after which the bland antiseptic powder above referred to can be used as a dressing. In these cases tonic and supportive treatment is of the utmost importance—iron, strychnine, cod-liver oil, and quinine—should be freely given.

The Treatment of Secondary Syphilis.—We now come to the consideration of the secondary, or active, stage of the disease. This appears from two weeks to six months after the chancre, the average period being six weeks. During this interval the disease is being slowly disseminated through the system, as is shown by the gradual enlargement of the lymphatic glands and by certain subjective symptoms, such as headaches, pains in the bones, and a general feeling of malaise. In this period it is well to put the patient in the best possible condition by regulating the diet, improving the digestion, and administering a tonic of iron, strychnine, and quinine. In this way the patient is not only improved physically, but also feels that something is being done for him, and is better satisfied.

Objective symptoms then put in their appearance. A macular or maculo-papular eruption usually appears on the abdomen and trunk, and the patient may have an angina, mucous patches in the mouth, a loosening of the hair, or an inflammation of the eyes—iritis. On examination at this stage, the post-auricular and epitrochlear lymphatic glands are found to be enlarged.

It is at this time that the physician usually commences his constitutional treatment, although some begin when they have first diagnosticated the initial lesion. It is not considered wise, however, to advise a course of mercurials when the initial lesion is the only symptom, as there is always a possibility of making a mistake in diagnosis, and again the early commencing of mercury is liable to postpone the symptoms of the secondary stage, or to prevent their appearance to such a degree that as time advances neither the physician nor the patient is sure whether there has actually been a syphilitic infection or not.

Syphilis in the secondary stage to-day is generally treated by mercury, although I have seen many cases under treatment by good physicians that were taking only iodide of potassium. Various preparations of mercury are given,

but the forms usually prescribed are the protiodide, in pills of one sixth of a grain; the tannate, in pills of half a grain: blue mass, in pills of half a grain each; bichloride, one thirtieth of a grain in pill or solution, or gray powder, in one-grain powders. In using these, the object to be obtained is to ascertain how much the patients can take without producing the poisonous effects, and then to keep them about a degree lower than the maximum amount until the symptoms of active syphilis have disappeared, when the treatment is generally modified and continued as such until the case is considered cured. The favorite preparation in this stage seems to be the protiodide. It is given in pill form, the strength usually being one sixth of a grain. A good method of increasing the strength is that advocated by Keyes, which is practically as follows: One three times a day for the first three days; one night and morning, and two at noon for the next three days; then two night and morning and one at noon for three days; and afterward two three times a day for another three days; then seven a day, increasing in the same manner; then eight; then nine; and so on until the symptoms of mercurial saturation begin to show themselves, such as colicky pains, diarrhœa, etc. When this point has been reached the same strength may be maintained, and the symptoms relieved by taking in addition a small amount of Dover's powder or some other opiate three times a day.

If symptoms of salivation occur the mercury should be stopped. It is always well to instruct the patients to be on their guard against salivation, to keep their teeth clean, and every morning on arising to click them together, and in case the gums or teeth feel sore to immediately leave off the medicine.

I do not believe in giving an opiate to counteract the intestinal symptoms of large doses of mercury, as it is apt to give the patient the opium habit, and it seems to me that it should never be used until other preparations have been tried which may perhaps be tolerated.

Patients can usually take twelve sixth-of-a-grain protiodide pills a day—that is, two grains—although some take as many as twenty—that is, three grains and a third. Many stop at nine, or a grain and a half. It appears to me that if the patient can not stand nine, it is much better to try some other preparations, to see if one can be found that can be better tolerated. It is well to have the patient on the largest dose that can be agreeably borne, as long as the active symptoms of syphilis are present, and then to fall back to three quarters of this dose, and to continue on the three-quarter allowance until active symptoms reappear, when the patient should again be put upon the full dose and kept upon it during this activity, when the dose can again be dropped to three quarters. If the protiodide can not be well borne, I know of no better salt to try next in order than the tannate.

The tannate may be given in pills of one half to one grain in strength, and may be increased until the patient is taking five grains a day. They are made by Schieffelin & Co., of this city. This form seems to be well tolerated and the patient obtains more mercury than by taking the protiodide. It seems to me that this salt has not been sufficiently tried by the profession. The pills are ordered as follows:

℞ Pil. hydrarg. tannici oxydulat. (Schieffelin)..āā gr. ss.

Sig.: One three times a day, and increase as directed.

The salicylate of mercury is popular with a few syphilographers. They begin with a fifth of a grain three times a day, and increase accordingly.

Pil. duo, containing two grains of pil. hydrarg. and one grain of ferri sulph. exsic., is advocated by others. Personally I do not like this pill, as I have seen many cases of salivation following its use.

Inunctions are good for severe cases, such as those of obstinate headaches, rheumatism, iritis, etc., and where the salts of mercury can not be well borne when given internally. Patients usually object to them, however, as they are unclean and irritate the skin. From twenty to sixty grains may be used at each treatment, and should be rubbed in as follows:

The first day, on the inner side of the legs; the second day, on the inner side of the thighs; the third day, in the iliac regions; the fourth day, over the sides of the chest; the fifth day, over the inside of the upper arms; the sixth day, over the flexor surfaces of the forearms; the seventh day, rest.

These should be taken at night before retiring. If they prove to be irritating, a bland ointment may be applied after each inunction. Woolen underclothing should be worn during a course of inunctions.

Symptoms of salivation should be carefully watched for during this treatment, as it is liable to come on very suddenly.

An interesting fact concerning the giving of inunctions in an institution is that the attendant, or rubber, in these establishments, whose hands are constantly in contact with the ointment, seldom has symptoms of salivation.

Kaposi considers inunctions the best method of treatment. He says that the mercury penetrates into the subcutaneous tissue, where it is transformed into soluble albuminoids, and, coming into contact with the specific virus, destroys its power. From thirty to forty inunctions are usually sufficient to relieve severe symptoms, but if not, they should be continued until these have abated.

Hypodermic injections of the bichloride of mercury have been advocated by many. They maintain that by this method gastro-intestinal irritation and dermatitis are avoided. The solutions are usually made with sodium chloride or glycerin. They inject from one twelfth to a quarter of a grain of bichloride a day deep into the gluteal region. A good prescription is:

℞ Hydrarg. bichloridi..... gr. j;
Glycerin, }
Water, } āā..... ʒ j.

M. Sig.: Inject ten drops daily.

This is Eichler's method. Each ten drops contains a twelfth of a grain. In using these solutions, they are given every day, every two days, three days, four days, or seven days, according to their strength. They often give rise to nodosities, abscesses, cellulitis, etc. Calomel is

also given hypodermically with glycerin and water, but it is not popular. Fumigations are to-day rarely used.

In regard to the efficacy of hot baths, they simply seem to remove a certain amount of dead epithelium, and to improve the circulation in the skin in such a way that the mercury by inunctions is better absorbed. Going to a bathing resort also gives the patient the idea that more is being done for him and encourages him, at the same time giving him a change of air, scene, etc.

The Treatment of some of the Special Manifestations of the Secondary Period.—Local applications during the secondary period are frequently made, as in the following instances: Occasionally on the forehead there are a number of lenticular papular lesions forming a corona Veneris. In this case it is well to apply the ammoniate-of-mercury ointment on a piece of sheet lint on retiring and to allow it to remain on overnight. This seems to hasten their disappearance.

Palmar syphilides are also objectionable. These cases are of the squamous variety, and may also be treated by the white-precipitate ointment alone or mixed with equal parts of zinc-oxide or boric-acid ointments.

Ecthymatous, impetiginous, and pustulo-crustaceous syphilides are also benefited by the same applications.

Moist papules about the genitals are best treated by the powder of bismuth, boric acid, and calomel already alluded to.

In case of mucous patches in a man's mouth, his tobacco should be cut off, and he should use a mouth wash of 1-to-2,000 bichloride solution in peppermint water four or five times a day, in addition to which the patches should be touched every three or four days with a one-in-eight solution of nitrate of silver. The best way of doing this is by twisting a thin film of absorbent cotton about the end of a toothpick and then moistening it in silver solution, when it is applied to the mucous patch until it becomes whitened.

In syphilitic alopecia the head should be washed night and morning with a 1-to-1,000 solution of bichloride; or an ointment of ammoniate of mercury and boric acid may be applied.

In iritis, a four-grain-to-the-ounce solution of atropine, if instilled four times a day, is usually sufficient to keep the pupil dilated. This may be increased in strength if adhesions are forming. When opiates are being taken by the patient, a still stronger solution is sometimes necessary. In addition to this, the eye is washed out with a mild solution of boric acid as often as necessary, and in severe cases hot applications are at times kept upon the lids. If permanent adhesions between the iris and the lens result, iridectomy may be performed. Local mercurial inunctions above the eyebrow on the affected side are also of service.

The angina accompanying the acute stage may be treated by a gargle of 1-to-2,000 solution of bichloride of mercury in peppermint water above referred to, or by a solution of fifteen grains of zinc chloride in one ounce of listerine and three ounces of water.

In onychia and paronychia the ammoniate of mercury should be applied locally, and a glove finger worn over the parts for protection.

Of course, in all these cases the internal treatment remains the same, and throughout the entire period of the secondary stage the patient should be kept in the best possible health. His digestion should be carefully watched and his diet regulated. He should have plenty of plain food, fresh air, and exercise. Stimulants can be indulged in if well tolerated, but should be limited to light wines. Smoking in moderation may be allowed if it does not irritate the mouth and cause mucous patches. Sexual intercourse should be forbidden until all active symptoms of the disease have disappeared.

Some keep the patient on mercury for two years. It is my custom to give it for one year and then to change it to mixed treatment, which I continue for another year. In prescribing this I order a sixteenth of a grain of the biniodide of mercury and from three to seven grains and a half of iodide of potassium in the compound syrup of sarsaparilla, or, better, the same strength in the Fraser "mixed-treatment" tablets, to be taken three times a day.

For the toxic effects of the mercury, stomatitis or gingivitis, usually accompanied by ptyalism from the overdosing of mercury, a saturated solution of chlorate of potassium alternating with one of boric acid will do good as a mouth wash; or better, by one of half an ounce of "borine" to four ounces of water, to be used every two or three hours, or oftener if necessary. If the ptyalism is marked, it may be controlled by small doses of atropine.

The Treatment of Tertiary Syphilis.—Tertiary syphilis occurs in about ten per cent. of the cases, and puts in its appearance from three to twenty years later. It is much less frequently seen in private practice. Its commonest manifestations are tubercular and gummatous lesions of the skin, periostitis, osteitis, osteomyelitis, dactylitis, rhinitis, pharyngitis, laryngitis, orchitis, and epididymitis.

These forms are best treated by iodide of potassium internally and some preparation of mercury, as the unguentum hydrargyri or the unguentum hydrargyri ammoniati, locally. The iodide of potassium, a grain to the drop, may be given in water or milk with the compound syrup of sarsaparilla or the syrup of orange peel, and may in some cases be run up to two hundred grains a day, which is usually sufficient to control nearly any active tertiary lesion. As high as eight hundred grains a day of this salt has been given. They say that this should be taken on an empty stomach, but I do not think that the presence of a little food does any harm. A preparation known as succus alterans, McDade's formula, has also been much used as an adjuvant to the iodide of potassium. It is taken in drachm doses before meals.

Syphilitic orchitis and epididymitis are treated by mixed treatment, and iodide of potassium internally and equal parts of unguentum hydrargyri and unguentum belladonnæ externally.

Dactylitis occurring in tertiary syphilis is a condition in which the fingers or toes may be the seat of gummatous infiltrations, either in the connective tissue or fibrous structures of the joints or in the periosteum or bone. For this condition we can give iodide singly or combined with mercury, tonics internally, and mercurial ointments locally. If

ankylosis is inevitable, we should strive to have it occur with an extended finger. If necrosed bone is present, it should be scraped away with a curette.

For *syphilitic rhinitis* "mixed treatment" and iodide may be given internally and iodoform locally. Dead bone should be removed if necessary. This can sometimes be best reached by dissecting up the lip and the soft parts, and carrying them up on to the forehead.

In *syphilitic pharyngitis* the same treatment is employed externally and internally. The adhesions may be cut by a knife or galvano-cautery, and new formations may be treated by the monochloracetic acid. When *laryngitis* occurs, the iodide of potassium internally and iodoform externally are again used, and, in addition to this, sprays of *bichloride* or a preparation of the yellow oxide of mercury and vaseline may be employed locally. Papillomas may be removed by the cutting dilators, by snares, or by being cauterized with acids.

Bone Syphilis.—In periostitis, osteitis, and osteomyelitis, the mixed treatment and the iodides are used internally and a mercurial ointment externally. In gummata affecting the periosteum, which are soft, red, and glazed at times, it is best not to open them unless suppuration has taken place. These may be cured by internal treatment.

In osteomyelitis, where there are great pain and enlargement, if cutting down through the periosteum does not relieve the symptoms, it may be necessary to trephine.

In the ordinary cases of tertiary syphilis good results are obtained by giving the "mixed treatment" internally and using mercurial ointment externally, and it is only when some serious or active process takes place that it is necessary to give the very large doses of iodide. It appears to me from observation in these tertiary troubles that we obtain better results from large doses of iodide when taken in connection with "mixed treatment."

The conditions which indicate the use of iodides are an excess of cell growth and an accumulation, either from the renewed activity in the residua of the antecedent disease, or from a crippling or obliteration of the lymphatics, due to the long-continued hyperplasia and irritation of the secondary stage (White).

As we have the toxic manifestations of mercury during the second stage, so we have the toxic effect of iodide of potassium, known as iodism, in the third stage. The symptoms of too much iodide are a gastro-intestinal irritation, coryza, lacrymation, mental depression, tinnitus aurium, acne, and other cutaneous manifestations. Thin says: "The rationale of iodide eruptions seems to be that there are conditions in which iodine, when present in the blood, attacks and disorganizes the blood-vessels at certain localized points, and as a result to this injury to the wall of the vessels there is an escape of blood fluid into the surrounding tissues."

Conclusions.—In conclusion, I would like to say that in the primary stage of syphilis the initial lesion, if in evidence, is best treated by lotio nigra or an antiseptic astringent powder, and, if actively ulcerating or unhealthy, it should be touched with a strong solution of nitrate of silver.

If the lesion is subpreputial, irrigations of an antiseptic or astringent solution should be first tried, and in case they do not reduce the inflammation sufficiently to retract the prepuce, a dorsal incision should be made, after which the sore may be treated as one on the surface. The powder that has been used by me since I have been in practice is the one to which I have referred, and consists of equal parts of boric acid, bismuth, and calomel, known in the hospital as the A. B. C. powder. Most patients coming under my observation who have been treated by others wear a dressing of aristol or iodoform disguised by some of the essential oils. Personally I have never used iodoform in private practice, and in a large venereal practice in the City Hospital it has only been employed by me in the phagedenic cases, so rarely seen, when I am in the habit of using it combined with charcoal. In secondary syphilis I find that almost every case can be successfully treated by the protiodide or the tannate of mercury taken internally, if the patient's health and digestion are properly looked after. I have been in the habit of using one of these salts during the first, and the mixed treatment, containing the biniodide and a small dose of the iodide of potassium, during the second year. It seems to me, however, that there is a tendency among physicians at the present time to give mercury for a longer period, and less iodide. Iron and tonics in this stage are of great importance in keeping up the strength and tone of the individual.

In the treatment of mucous patches in the mouth, which are so troublesome in the secondary stage, I should like to emphasize the value of the use of the 1-to-2,000 solution of bichloride of mercury in peppermint water as a mouth wash.

In the tertiary stage I deprecate the use of too much iodide, and think that this salt is more efficacious when given with small doses of mercury. The extreme doses of iodide should only be used when the symptoms are urgent and should be discontinued as soon as possible. In neither the secondary nor the tertiary stage of syphilis should the unguentum hydrargyri be used as a local application, as it is not as effective as the ointment of the white precipitate (unguentum hydrargyri ammoniati), and is an eyesore which announces the disease for which it is being used.

23 West Fifty-third Street.

A CASE OF MECKEL'S DIVERTICULUM.

By GEORGE TULLY VAUGHAN, M.D.,
PASSED ASSISTANT SURGEON, MARINE-HOSPITAL SERVICE;
IN COMMAND OF UNITED STATES MARINE-HOSPITAL SERVICE, PHILADELPHIA.

This case is reported in the belief that all such abnormal cases should be placed on record and in reach of those who write books and compile statistics. It is of special interest to the embryologist, and in umbilical fistula and in rare cases of intestinal obstruction may become of interest to the surgeon.

A few words of explanation may not be amiss before describing the case. The embryonic intestine consists of a straight tube communicating by the front or head end with the vitelline duct and through it with the umbilical vesical (or yolk sac in birds), and by the hind or tail end with the allantois. In the course of development the allantois be-

comes separated from the intestine (hind gut) and dilated to form the urinary bladder. By the greater development of the anterior as compared with the posterior part of the gut, the attachment of the vitelline duct is at that point which afterward becomes the lower part of the ileum.

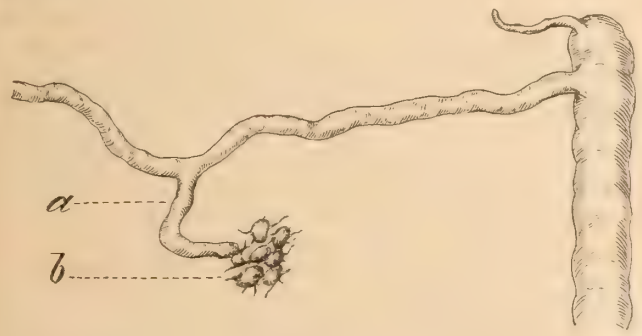
Having served their function, the vitelline duct and umbilical vesicle dry up, their cavity becomes obliterated, and the organs are absorbed down to the point of junction with the ileum. Occasionally, however, the vitelline duct, instead of being absorbed, remains as a solid cord extending from the ileum to the navel, or as an open tube ending in a blind extremity, or extending through the navel with the umbilical cord, making a fæcal fistula. My case belongs to the second class named above.

A. H., aged twenty-one years, native of Delaware, admitted to the marine ward of the German Hospital, Philadelphia, April 25, 1896, sick with enteric fever; died on May 5th.

There was nothing peculiar in the patient's family or personal history. During his illness he suffered from tympanites, but the necropsy showed that it had no relation to the abnormity which existed. Death was due to exhaustion.

At the necropsy, the colon was found greatly distended with gas. Ulcerated Peyer's patches and solitary glands were found in the ileum and cæcum. The mesenteric glands and spleen were enlarged.

One hundred and twenty-five centimetres (fifty inches) from the cæcum a diverticulum was found projecting backward from the ileum and ending in a blind extremity which was attached by means of the mesentery to a mass of enlarged mesenteric glands. The diverticulum was slightly smaller in calibre than the ileum at its junction with that intestine (about one and three quarters centimetre in diameter) and was still smaller at the blind end. It extended from the ileum at right angles for five centimetres, at which point it was bent at right angles on itself and extended two and a half centimetres further—seven and a half centimetres in all. Thus:



a, Meckel's diverticulum, showing its shape; *b*, a mass of enlarged mesenteric glands.

The interior of the diverticulum had apparently the same structures as the intestine to which it was attached. It contained two small, swollen Peyer's patches near its origin, and several enlarged and ulcerated solitary glands.

There was no cord or structure extending to the umbilicus.

Yale University.—On Tuesday, June 23d, at noon, Colonel George E. Waring, Jr., of New York, will deliver the annual address in medicine, on The Proper Disposal of Sewage, in Battell Chapel. In the evening the medical faculty of the university will give a reception in honor of Colonel Waring at Professor Charles A. Lindsley's house.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. APPLETON & Co.
Edited by FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, JUNE 20, 1896.

THE EXAMINATION FETICH.

OUR British friends seem to have waded deeper than we had supposed into the pool of faith in the omnipotence of examinations. This appears from a speech made lately by Mr. Teale in the General Medical Council on the occasion of his submitting the following notice of motion:

"That the present system of accumulated examinations and the enormous increase in the number of rejections resulting from it are not only unjust to the student but damaging to medical education; therefore, that the time has arrived when the General Medical Council should consider: (*a*) How far examinations and the occasions of rejections can be reduced in number; (*b*) how far, while maintaining effective examinations in those subjects which it is essential that every medical man should 'know' and 'retain the knowledge of,' it is possible to withdraw from the sphere of public examination several other subjects which it is desirable that every medical man should 'know about,' but with the details of which he need not permanently burden his mind, the 'bird's-eye survey' of such subjects being insured by compulsory short courses of lectures with class examinations certified by the teacher."

In the *British Medical Journal* for June 6th we find Mr. Teale's remarks printed in full. Taking final examinations only, it seems that the percentage of rejections has been increasing steadily for more than thirty years. In 1861 it was 12·4; in 1876, 22·2; in 1880, 28·9; and in 1892, 38·9. The student's real education is neglected in the all-absorbing grind of cramming for examinations. He is unable to avail himself of clinical opportunities that are far more important than the greater part of the book-knowledge with which the examinations deal; consequently, when he goes into practice as somebody's assistant, he is found full of knowledge of bacteriological methods, but very deficient in powers of observation. He is learned, but not wise. Mr. Teale says that the examinations are too exacting and that they are conducted in too hurried a manner, also that many of the questions are unsuitable, some of them even misleading. Good men fail to pass, and unfit men, having a talent for cramming, manage to answer the questions a little too well to warrant the examiners in plucking them. On these points, Mr. Teale quotes the following passage from a report by Sir George Humphry:

"The burdening of the memory with mere facts, which have no direct or obvious connection with science or practice—with facts, that is, unassociated with ideas or practical utility—is on the whole of little value educationally or other-

wise, and such facts make but a transient impression on the memory. Laboriously crammed together, with efforts worthy of a better purpose, they are with difficulty held until the examination crisis, and then quickly escape with little regret at their departure. Indeed, the examination in each subject of professional study should be restricted to the general principles and the more important facts of the science, and should be of such a character as to induce students, in their preparation for it, to observe and think for themselves more than is now commonly the case. The examinations should be regarded from an educational point of view, with reference, that is, to the influence which they are likely to exert upon the character, the education, and the mental training of the students who are to come after, as well as with reference to their being a test of fitness for admission to the *Medical Register*."

As regards the interference of the system with clinical work, Mr. Teale quotes the following passages from an introductory address by a Dublin surgeon, Mr. Tobin, delivered at the opening of the sessions of 1895 to 1896 at St. Vincent's Hospital: "It thus appears that there are two stages in the curriculum—a preliminary scientific stage and a stage devoted directly to medical problems. It is with this second stage that I as a hospital teacher am most concerned, and the question that I ask you to consider with me to-day is this: Does the student spend his time during this stage to the best advantage? As far as I can see he does not. For in place of being relegated to the hospital for his training during this second period, he is obliged to attend the school for theoretic lectures in medicine and surgery, and for examinations in connection with these lectures, and these examinations so dominate his views that he spends his time in hospital, not watching the changes in his patients, but on the look-out for ready-made answers to questions. If urged to make records of cases, he does so reluctantly, for he knows that from an examination point of view it does not pay; and if, toward the conclusion of his course, he is offered the position of resident pupil in a large and busy hospital, he often refuses it because he is going in for his 'final,' and, of course, the one thing essential is to pass. His medical education therefore, notwithstanding a large amount of hospital attendance, is literary rather than practical." "Moreover, education, as at present conducted, teaches us to see with the eyes of others rather than with our own." "Further, the regulations are armed with a revolver in the shape of examinations, which enforces the obedience of students. Nothing else could keep alive such a system—one which, as it were by violence, keeps theory and practice apart."

Mr. Teale's criticisms, we fear, would apply elsewhere than in England. We think there is too great a tendency in the United States to make the final examinations unnecessarily difficult to pass and unpractical in their character. No medical student who comes up for the degree can be expected to have at his tongue's end sixty per cent. of all existing medical knowledge. The examinations are directed too much toward finding out what a man's stock of memorized facts amounts to, and too little toward ascertaining how far he has learned the art of studying by himself and how well qualified he is by natural gifts.

MINOR PARAGRAPHS.

DR. EMMET'S HISTORICAL LIBRARY.

It is announced that the extremely valuable collection of books, manuscripts, and prints relating to American history made by Dr. Thomas Addis Emmet is to be added to the New York Public Library, but to be kept together and called the Emmet Library. That Dr. Emmet should have consented to such a final disposal of the fruits of a life-long work carried on with rare avidity is most creditable. The collection is far too valuable to be stored in any dwelling house, or indeed to be long withheld from the public.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending June 16, 1896:

DISEASES.	Week ending June 9.		Week ending June 16.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	16	5	12	2
Scarlet fever	88	4	90	7
Cerebro-spinal meningitis	3	3	1	1
Measles	260	26	209	13
Diphtheria	278	36	226	30
Tuberculosis	139	102	213	105

A Medical Department for the Ohio Wesleyan University.—All negotiations have been completed between the trustees of the Ohio Wesleyan University, in Delaware, Ohio, and the faculty of the Medical Department of the University of Wooster, in Cleveland, whereby the latter school becomes the medical department of the former. The medical school will hereafter be known as the Cleveland College of Physicians and Surgeons. As a result of this union the university comes into possession of a well-situated lot of ground which has been given as a site for the erection of a building for medical laboratory purposes. The building is to cost not less than fifty thousand dollars, and must be completed in October, 1897. The funds for this purpose have already been subscribed. These improved facilities for laboratory teaching, together with the new hospital, will add materially to the educational usefulness of the newly created department of the university. At the annual faculty meeting Dr. Charles B. Parker was elected dean of the new school, and Dr. H. W. Rogers was re-elected secretary.

The Congressional Antivivisection Bill.—At the recent annual meeting of the Kentucky State Medical Society the following resolution was introduced by Dr. Henry E. Tuley, of Louisville, and was unanimously passed:

Whereas, Resolutions concerning vivisection were passed by the American Medical Association at Atlanta; therefore be it

Resolved, That the resolutions mentioned and published in the *Journal of the American Medical Association* express the sentiments of the Kentucky State Medical Society, and that our secretary be instructed to send copies of these resolu-

tions to the Representatives in Congress and the Senators from our State.

The Indiana State Medical Society at its recent meeting passed resolutions, on motion of Dr. E. S. Larkins, of Terre Haute, indorsing the report of the committee on vivisection of the American Medical Association and instructing the secretary to furnish a copy to each of the Senators and Congressmen from Indiana, asking them to oppose the action of the so-called Humane Society of the District of Columbia.

The Ohio State Medical Society.—The officers for the year 1896–'97 are: President, Dr. F. C. Larimore, of Mount Vernon; vice-presidents, Dr. M. Stamm, of Fremont, Dr. C. F. Clark, of Columbus, Dr. John S. Beck, of Dayton, and Dr. George W. Crile, of Cleveland; secretary, Dr. Thomas Hubbard, of Toledo; assistant secretary, Dr. H. M. W. Moore, of Columbus; treasurer, Dr. James A. Duncan, of Toledo. The next meeting will be held in Cleveland, on May 19, 20, and 21, 1897.

The Appleton Prize, consisting of twenty-five dollars' worth of Messrs. D. Appleton & Co's. medical publications, offered annually by that firm to the candidate passing the best examination before the board of medical examiners of the State of North Carolina, was won this year by Dr. Charles S. Mangum, of Chapel Hill, who had a percentage of 94·144.

The Brooklyn Medical Society.—At the last meeting, on Friday evening, the 19th inst., a practical demonstration of the production of Röntgen pictures was made by Dr. William Stubenbord, of New York, and Professor H. W. Schimpf, of Brooklyn.

The Buffalo Academy of Medicine.—At the last meeting of the Section in Pathology, on Tuesday evening, the 16th inst., the special order was a discussion on The Milk Supply of the City of Buffalo (Statistics of Gastro-intestinal Diseases in Infants, by Dr. F. C. Gram; Infection by the Health Department, by Dr. W. H. Heath; Bacteriology, by Dr. Maud E. Frye and Dr. H. M. Hill).

The New York Electro-therapeutic Clinic, Laboratory, and Dispensary.—We learn that on Saturday, June 13th, this institution was closed for the summer, to be opened again on September 15th.

Change of Address.—Dr. John A. Wyeth, to No. 151 East Thirty-fourth Street, New York.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from June 6 to June 13, 1896:*

WALES, PHILIP G., Captain and Assistant Surgeon, is relieved from temporary duty at Fort Monroe, Virginia, and will return to his proper station, Fort McPherson, Georgia.

Society Meetings for the Coming Week:

MONDAY, *June 22d:* Medical Society of the County of New York; Boston Society for Medical Improvement; Cambridge, Mass., Society for Medical Improvement; Baltimore Medical Association.

TUESDAY, *June 23d:* Medical Society of New Jersey (first day—Asbury Park); Delaware State Medical Society (first day—Newark); Buffalo Academy of Medicine (Section in Obstetrics and Gynæcology); Medical Societies of the Counties of Essex (annual—Elizabethtown) and Lewis (annual), New York; Richmond, Va., Academy of Medicine.

WEDNESDAY, *June 24th:* Medical Society of New Jersey (second day); Delaware State Medical Society (second day); New York Academy of Medicine (Section in Laryngology and Rhinology); New York Pathological Society; American Microscopical Society of the City of New York; Medical Society of the County of Albany, New York; Philadelphia County Medical Society.

THURSDAY, *June 25th:* New York Academy of Medicine (Section in Obstetrics and Gynæcology); New York Orthopædic Society; Pathological Society of Philadelphia.

FRIDAY, *June 26th:* New York Society of German Physicians; Philadelphia Clinical Society; Philadelphia Laryngological Society; Cleveland Medical Society.

SATURDAY, *June 27th:* New York Medical and Surgical Society (private).

Births, Marriages, and Deaths.

Married.

BOURGEOIS—JACKSON.—In Baton Rouge, on Wednesday, June 10th, Dr. Camille Bourgeois, of Thibodeaux, Louisiana, and Miss Laura Jackson.

BRATHWAITE—FORCE.—In Buenos Aires, on Wednesday, June 10th, Dr. Frederick Gretton Brathwaite, U. S. Navy, and Miss Marguerite Force.

CLEAVER—PATTERSON.—In New York, on Tuesday, June 16th, Dr. James F. Cleaver and Miss Ruby Patterson.

CRAWFORD—WOOD.—In Milwaukee, on Wednesday, June 10th, Dr. J. William Crawford, of Chicago, and Miss May Frances Agnes Wood.

FITZ-GERALD—DASHIELL.—In Newark, on Wednesday, June 10th, Dr. Paul Fitz-Gerald and Miss Grace Bentley Dashiell.

PEARSE—BATTERSHALL.—In Albany, on Wednesday, June 10th, Dr. Henry Seymour Pearse and Miss Cornelia S. Battershall.

VANDENBERG—MELDRUM.—In Buffalo, on Saturday, June 13th, Dr. Frank P. Vandenberg and Miss Jessie Rollock Meldrum.

Died.

CLASON.—In Danbury, Connecticut, on Tuesday, June 16th, Dr. Abraham T. Clason, aged fifty-six years.

GILLESPIE.—In Roxbury, Massachusetts, on Sunday, June 14th, Dr. John Gillespie, in the thirty-sixth year of his age.

HOUGH.—In Elizabeth, New Jersey, on Friday, June 12th, Dr. Thomas L. Hough, aged sixty-five years.

RAMSDELL.—In New York, on Friday, June 12th, Dr. Edwin D. Ramsdell.

ROBINSON.—In Manchester, New Hampshire, on Saturday, June 13th, Dr. John L. Robinson, in the sixty-first year of his age.

Letters to the Editor.

THE TREATMENT OF EPILEPSY.

156 MADISON AVENUE, *June 10, 1896.*

To the Editor of the New York Medical Journal:

SIR: In your issue of June 6, 1896, an article relating to the treatment of epilepsy appears, in which Dr. Frederick Peterson makes some very remarkable statements that should not be allowed to pass unchallenged.

The statements to which I would personally take issue are comprised in his "list of points" that he deems of "paramount importance." I quote from his article as follows:

"1. Reflex epilepsy is so rare that the proportion of cases in which a reflex cause will be found is certainly not above one or two in a thousand.

"2. In chronic cases where the epilepsy has had its origin in a reflex cause, the convulsive habit has become so strong that removal of reflex irritation will seldom alter the course of the disease.

"3. There are surprisingly few cases on record in which an operation of any kind whatever for the relief of so-called reflex causes has induced a cure of epilepsy. I think *authentic and trustworthy instances of the kind recorded in literature could easily be counted upon the fingers.**

"Bearing these points in mind, the practitioner may perform his gynæcological operations, circumcise, carry out procedures on the nose, tamper with the eye muscles, or what not, but let him not be too sanguine of a successful issue. He will be fortunate indeed to meet with a single success."

The most common substitutes for candid and honest argument with lawyers in some courts, and occasionally, I am ashamed to say, in scientific medical discussions, is first to employ ridicule in place of argument, and (failing with that weapon to draw attention from the main issues) to resort later to attacking the credibility of witnesses.

Neither of these methods is deemed by honest men highly creditable to those who employ them; nor are they usually of much avail with cultured and intelligent minds. Like the boomerang, they are apt to do more harm to those who attempt to use them against an antagonist than to the foe.

Let us see whether any such attempts to befog the professional mind are suggested in Dr. Peterson's wholesale condemnation of methods that are to-day practised by many in the treatment of epilepsy (and other neuroses) and which have been highly extolled by men of international repute.

I would ask Dr. Peterson, in the first place, how he has so accurately figured the percentage of reflex causes in epilepsy as to warrant his deduction of from one to two cases in a thousand. Is this not pure guess-work on his part? If so, why does he give it the garb of scientific accuracy?

No one has ever heard of Dr. Peterson giving personal attention to many of the methods that he condemns. Is he a skilled gynæcologist; has he had a large experience in surgical work upon the nose or teeth; is he familiar with the later methods of investigating defects in adjustment of the eye muscles; or has he simply given his final verdict of condemnation of the work of other skillful men without personal knowledge of their fields of labor?

Does Dr. Peterson think that no one is "authentic or trustworthy" who has ever reported cures of epilepsy either by circumcision, the removal of diseased ovaries, the extraction of teeth, the removal of scars, or "tampering with the eye muscles"?

Does he hope to arraign the credibility, honesty, and skill of hundreds of medical men of repute when he says that all "authentic and trustworthy" cases of the cure of epilepsy by removal of reflex causes can be counted on his fingers?

He certainly can not be so ignorant of what has been written on these fields as to have been led to thoughtlessly make such a statement; and yet he openly rejects all reported cases of the cure of epilepsy (except "one or two in a thousand"), not because he knows anything about them, but because in his prejudice he apparently prefers to cast a slur upon the honesty and credibility of the witnesses. No one will or can deny the well-recognized fact (which Dr. Peterson seems to lay stress upon) of the non-curability of a large percentage of epileptics.

For centuries epilepsy has been recognized by all authors as a most serious and intractable nervous malady. It is for this reason (because drugs gave only temporary relief) that some of the brightest minds in the medical profession have long sought (unfortunately in vain) for any positive pathognomonic lesions as a cause for many of these convulsive seizures.

Because of the utter hopelessness of these cases, many of the progressive medical men of this day have welcomed all lines of investigation and all reported cases that tend to shed any light upon their treatment and causation.

If "one or two cases in a thousand" should prove to be all that could be completely cured of epileptic seizures by the eradication of reflex causes, is not that a boon to suffering humanity? If a still larger percentage could be as much benefited by similar treatment without the deleterious influences of drugs, would not medical science have taken a great step in advance of the "bromide treatment"?

But I am sure that the literature of this subject, which is daily growing more extensive, warrants the medical practitioner and the epileptic patient in hoping for a much larger percentage of cures than Dr. Peterson would lead us to offer.

In a contribution from my pen to the *Annals of Ophthalmology and Otology* (April, 1896) I give among the conclusions relative to the treatment of epilepsy by the relief of "eye-strain" certain paragraphs which I quote as follows:

"I have observed many cases of chronic epilepsy that have been relieved of all convulsive seizures so long as the full effect of atropine upon the ciliary muscle was maintained.

"*No promises that absolute cure can be effected by eye treatment should ever be made to an epileptic;* but it is usually safe for the physician and patient to hope that a radical correction of marked heterophoria and abnormal refraction will eventually be followed by decided and permanent benefits.

"The results in all cases thus far treated by me seem to warrant the conclusion that at least *ninety per cent. of chronic epileptics have been better without bromides*, after a satisfactory correction of their eye defects, than they ever were when subjected to the influence of drugs. *Some have apparently been cured.* By eye treatment, up to this date (February, 1896), about twenty per cent. of my cases have apparently been cured of epileptic seizures; but I doubt if so large a percentage of recoveries can be safely predicted without medication.

"It should be remembered that a victim to chronic epilepsy who is rendered by any treatment as free from attacks without the bromides as when under their deleterious influence has been *very markedly benefited;* again, that if a marked diminution of the attacks has been effected, the patient has double cause for gratitude; finally, that if the attacks are arrested *in toto* without drugs, it is to-day one of the most remarkable facts recorded in medical literature.

"In cases where negative results have been observed in spite of a satisfactory investigation and correction of marked heterophoria and abnormities of refraction, I would deem it wise (before resorting to drugs for epileptic seizures) to search for other sources of reflex peripheral irritation (such, for example, as bad teeth, phimosis, rectal or uterine disease, scars, etc.).

"Furthermore, the detection of chronic kidney disease, syphilis, organic brain lesions, and depression of the skull, is most important prior to the beginning of eye treatment or a search for other forms of peripheral reflex disturbances.

* Italics my own.

"The treatment of heterophoria by *prismatic glasses alone is not curative;* nor, in my opinion, are very marked beneficial results to be expected from them. Prismatic glasses are valuable aids, however, in determining the existence and amount of 'latent' heterophoria prior to the radical correction of such defects by graduated tenotomies."

In conclusion, I would say that I do not desire to discuss here either the percentage of reflex causes in epilepsy or of the cures of such cases.

Nor do I think it necessary (as some neurologists maintain) to draw fine lines of distinction between "true" epilepsy, "hystero-epilepsy," and other specially designated forms whenever a patient becomes unconscious, bites the tongue, becomes livid, falls, and shows other clear symptoms of typical epileptic seizures.

It long ago ceased to be a matter of any great importance to me (and I presume to many others who are working in new paths) whether the profession at once accepted or opposed methods that gave relief to suffering humanity; but such a wholesale condemnation of new methods and of those who employ them (by implication) as Dr. Peterson has published seems to me to justify at least a protest in reply.

Personally, I am convinced that Dr. Peterson's conclusions are erroneous; and my conviction grows stronger with each year's experience in searching for reflex causes of nervous diseases.

Every day I see and record facts that encourage me in my efforts in that direction, even in the most serious nervous malady that the physician encounters, viz., epilepsy. Never, until within the past decade, did I approach the treatment of a chronic epileptic with the *slightest feeling of hope* of a successful issue.

My record books are now quite full of letters from chronic epileptics (of the past) expressing the greatest gratitude and joy over their freedom from the thraldom of bromides and their restoration to a life of usefulness without the aid of drugs. In my monographs on the Eye Treatment of Epilepsy * I have given to the profession the names of the physicians who kindly placed their patients under my care, and quite full details of the treatment of each case, with the results. Confirmatory evidence of good results in other hands by similar methods of treatment is on record in various medical journals and a few monographs; and some equally startling results in the treatment of epileptic seizures by dental work, nose surgery, and gynæcological procedures are not infrequently reported by physicians of repute.

Dr. Peterson is unquestionably right when he states that the physician in general practice may be disappointed in his results when he, among other steps, "tampers with eye muscles"; but does this prove that experience and acquired skill in any special line may not accomplish more than the efforts of a beginner or a bungler? AMBROSE L. RANNEY, M. D.

Miscellany.

Insanity from Poisons Generated in the Intestines.—Apropos of a paper recently read in London by Dr. Allan McLane Hamilton, of New York, the *Medical Press and Circular* said editorially in its issue for May 27th:

"We are so much accustomed to regard insanity in its various forms as the outcome of hereditary influence *plus* special strain that it is useful to be reminded occasionally that mental disturbances are not always so strictly constitutional, and that mental aberrations may, in a certain proportion of the cases at any rate, owe their origin to such ephemeral and preventible causes as functional disorder of the intestinal canal. A paper on this subject was read by Dr. Hamilton, of New York, at the last meeting of the Medical Society of London, and although we are by no means prepared to admit the accuracy of all his deductions, it may fairly be asserted that he has succeeded in demonstrating that certain varieties of insanity are the direct outcome of the action of poisons elaborated in, and absorbed from, the intestinal tract. Years ago, Dr. Lauder Brunton directed attention to the phenomenal activity of the toxic products elaborated in the course of an ordinary attack of indigestion, and although he does not appear to have included the production of even temporary insanity among the troubles to which they may give rise, he established a striking analogy between their action and that of curare. The intestinal tract is the habitat of an almost incredible number of bacteria and fungi which, or some of them, assist in the process of food disintegration, preparatory to assimilation, and under normal circumstances they hold each other in check. It is easily conceivable that under altered circumstances, either in the direction of a change in the composition of the fæces or an altered environment such as would be afforded by a condition of chronic catarrh, the balance of bacterial power may be disturbed, the beneficent microbes taking a back seat while the more virulent species, temporarily at any rate, gain the upper hand. If we add to this an unduly prolonged retention of the abnormal fæces in the intestines, we have all that is required to provide, and permit of the absorption of, soluble toxic products capable, as laboratory experiments have repeatedly shown, of exerting marked pathogenic effects on the nervous system. Under ordinary circumstances, in the healthy animal organism, the liver acts the part of a chemical filter, eliminating from the blood all such toxic products which are thus prevented from entering the general circulation. When the liver function, for any reason, is imperfectly performed, these products are permitted to pass, and are left free to work their effects on the delicate tissues of the central nervous system. In persons who have acquired the habit of periodical evacuation of the intestines, it is surprising what an amount of discomfort and inconvenience is entailed by even a moderate delay in the accustomed rite, and it can not excite surprise that the systematic neglect of the intestinal function should give rise to more permanent and more serious manifestations. According to Dr. Hamilton's observations, it seems that a fair indication of the condition of the intestinal canal can be obtained from a careful examination of the urine. He confessed that he had been unable to discover any definite standard of abnormal urine which could be held to be characteristic of insanity, or of any particular form of insanity, but he pointed out that intestinal putrescence determines the presence in the urine of an appreciable quantity of indican, and when indican is present there is also a more or less marked alteration in the ratio of preformed sulphates. These indications, he stated, are generally found in acute insanities, especially those characterized by rapidly developing symptoms. Changing illusions, hallucinations of unsystematized delusions, in association with insomnia, pallor, constipation, and rapid exhaustion, are, in his opinion, generally due to autotoxis of alimentary origin, and this condition is also responsible for various post-febrile, traumatic, alcoholic, and

* *N. Y. Medical Journal*, January and February, 1894. *Annals of Ophthalmology and Otology*, April, 1896.

drug insanities. It is worth while recalling, while dealing with this subject, that the same effects have been attributed by various observers to the presence of uric acid in the blood, and as the effect of an excess of uric acid in the production of certain forms of mental disturbance is generally conceded, it is a difficult and a delicate task to distinguish which is primary and which secondary. The worst of the 'professors of uric acid' is that they ride their hobby to death or as near death as common sense will allow of. To listen to them, when they condescend to impart their views, uric acid is the *fons et origo mali* in most of the diseases, apart from the specific fevers, to which human flesh is heir. If the treatment based on the autotoxis hypothesis is shown to be successful in a certain class of cases we are assured that it is because this very treatment has incidentally for effect to favor the elimination of the surplus acid, and so on. Another class of critics object that the intestinal irregularity is the result, and not the cause, of the central nervous trouble, though, if treatment directed to the supposed intestinal focus proves successful, it is not easy to understand their process of reasoning. Under these circumstances it is well to go on broad general principles. We may take it as proved that a certain proportion of cases of insanity not obviously due to cerebral degeneration or other toxic influences may be immensely improved and even relieved by measures having in view the antisepsis of the intestinal tract. The washing out of the large bowel and the administration of antiseptics, such as naphthaline or salicylate of sodium, certainly seem to be attended by marked and favorable effects in these cases, and this is enough for the practitioner who may not have leisure to enter upon the judicial consideration of questions of ætiology and proximal therapeutics. The success of the treatment shows that, contrary to the dictum of Shakespearean skeptics, medicine can, under certain circumstances, 'minister to a mind diseased.' It may lessen the anxiety of the Government at a time when the increase of insanity is exciting dismay to be told that one of the most fertile causes is chronic constipation or intestinal catarrh. In any case the thoughtful and suggestive paper which Dr. Hamilton brought before the Medical Society of London ought to have for effect to direct the attention of those in charge of the insane to an important department of clinical observation hitherto comparatively unexplored, which may possibly in the near future give a rich harvest of therapeutical results in a whole category of mental diseases usually assumed, on insufficient data, not to be amenable to medicinal treatment."

A Critical Analysis of Dr. Winters's Clinical Observations on the Antitoxine Treatment of Diphtheria.—In the discussion of the subject at a recent meeting of the New York Academy of Medicine Dr. John Winters Brannan read a paper of which the following is an abstract:

When I was asked, some weeks ago, to take part in the discussion of the antitoxine treatment of diphtheria, it was only after considerable hesitation that I decided to accept the invitation. There were several reasons for my hesitation. In the first place, my experience with antitoxine, like that of Dr. Winters, is practically confined to hospital practice, and I believe that the time has passed when hospital experience can contribute much of value to the subject under discussion this evening. A year ago the case was different. At that time we had to rely entirely upon the experience of hospital physicians, who alone had a large number of cases at their disposal. Antitoxine must be administered early in order to get the best results, and we all know that patients do not, as a rule, reach the hospital until several days have elapsed from the beginning of the disease. It is in private practice only that the disease can be recognized and treated early, so that antitoxine may exert its greatest effect. Fortunately, we have now the experience of a large number of private practitioners, and it is they alone who can speak with authority on the subject. There are many in this room who have treated from twenty to a hundred cases, and I do not think that either Dr. Winters or myself is competent to express an opinion in their presence on the real value of antitoxine.

Secondly, I can hardly criticise Dr. Winters's views of antitoxine without commenting upon the attitude he has publicly assumed toward the Willard Parker Hospital. If Dr. Winters's position is sound and his observations are correct, the city of New York has been maintaining for eighteen months a hospital to which children have been taken and subjected to a method of treatment which not only is useless, but has in many instances led to the death of those children. This has been distinctly stated by Dr. Winters, and cases have been described by him in detail. As these statements have been made more than once in this academy, it is here that they should be disproved, if possible.

A few words as to what led to the use of antitoxine in Willard Parker Hospital, and as to who is responsible for its administration. In the autumn of 1894 the board of health, in view of the statements made for it abroad, decided to give it a fair trial in the hospitals under their charge as soon as a sufficient supply of the serum could be obtained. The hospitals of the health department differ from the rest of the hospitals of the city in that they have a resident physician who is directly responsible to the board of health, and only indirectly to the board of visiting physicians attached to the hospital. The position of the board of visiting physicians has been rather that of advisers and consultants. We, as a body, were entirely in favor of the step taken by the board of health. I state these facts to make it plain that all of the visiting physicians at the Willard Parker Hospital stand on the same level with reference to the use of antitoxine in that hospital. No one of us has any special interest in its use other than to determine its real value in the treatment of diphtheria. In considering the position which Dr. Winters assumed in his paper, read at the last meeting of the academy, I wish it understood I am attacking his position, not himself. We believe that he has made a grave mistake, and that he has done great wrong to the hospital of which he is one of the physicians, and that his words have caused widespread harm among the people of New York and of the whole country.

Before taking up the evidence submitted by Dr. Winters in support of his views let us see whether he entered upon his observations in the hospital with a mind open to conviction and free from bias. One can not read the arguments of any of the opponents of antitoxine without being struck with the fact that they all start with a distrust of the bacteriological diagnosis of diphtheria and with a reluctance to accept the help offered by the bacteriologists to the clinicians. Dr. Winters is no exception to this rule, and as long ago as in December, 1894, it was evident to the other members of our board that he had strong doubts of the curative power of antitoxine and was prepared to find it of no value. The systematic use of antitoxine was begun on January 1st of the following year, and from the very beginning he had no faith in its virtues, and was daily proving to himself that he was right in his opinion. He, however, kept his counsel, and no one had any inkling of what was to take place on that memorable evening in April a year ago. After barely three months

of observations on some hundred and fifty hospital cases, Dr. Winters had decided, for all time, that antitoxine was absolutely without value, and in addition produced great harm, even to the extent of causing death in those to whom it was given. From that time to this he has become more fixed in his convictions and has confirmed them by a personal investigation of the hospitals of Europe.

I, unfortunately, was not present at the meeting last year, but I have read and reread his vivid description of cases in which patients had died of antitoxine poisoning in the Willard Parker Hospital. I shall now take up some of the statements made in Dr. Winters's last paper; first, those bearing on his observations in the Willard Parker Hospital, and, secondly, those relating to his visit to Europe last summer.

All advocates of antitoxine state that it must be given early and in efficient doses in order to produce its full effects. Dr. Winters maintains that even when given under these conditions not only is it valueless, but, as seen by its action in mild cases, it even causes the death of the patient. In proof of this he cited twenty-five or thirty cases of favorable prognosis in which the patients had been injected on the first, second, or third day of the disease, and still had died. He stated that these cases were taken from the early months of 1895 and 1896—twenty-five or thirty cases. He did not give the full details of the cases; time did not permit of his giving more than what he called the "gist" of the cases. I have collected the records of all fatal cases in which antitoxine was used on the first, second, and third day, during the first four months of 1895 and the same period for 1896. There were nineteen in 1895. Twelve of the patients were two years of age or less; two were between two and three, leaving only five above the age of three years. One was four, two were five, one was seven, and one was forty-five. What was the condition of the patients in these fatal cases? Twelve had laryngeal stenosis, requiring intubation. Seven of the twelve in addition had pneumonia. In five of the non-laryngeal cases also the patients had pneumonia, making twelve cases of pneumonia, and seventeen of the nineteen were either pneumonia or laryngeal stenosis, or both. The single adult of the group, when he entered the hospital, showed impending delirium tremens. In spite of that the prognosis was put down as favorable.

Now, what was the prognosis stated in those cases? It was stated in the records, instead of being favorable in all, that the prognosis was good in six, doubtful in five, bad in eight.

Let us now take the cases for a similar period in 1896, January 1st to May 1st—some thirty-three fatal cases of persons injected on the first, second, or third day. Seven were less than one year of age, thirteen more were less than two, four just two, five between two and three, making twenty-nine of the patients in the thirty-three fatal cases under three years of age, and four over three years of age. As to the character of the cases: Twenty-two patients had laryngeal stenosis, nineteen requiring an operation, fifteen had pneumonia, two suffered from sepsis, and one, the only adult, was intoxicated on admission. The prognosis was stated on the records as good in two, doubtful in twenty, bad in eleven. The gist of the cases as given by Dr. Winters was, if I remember rightly, favorable prognosis practically in all; death after injection of antitoxine.

Dr. Winters has stated that since the introduction of antitoxine into the hospital there has been much greater use of stimulants. Now, it had been the distinct impression of all the rest of the attending staff that less stimulants had been used during the last sixteen months, just as they had found the treatment diminished the amount of iron, etc., used. Through fear that we might have been deceived, I sent to the clerk of supplies to the health department, and learned the amount of alcoholic stimulants used in the hospital during the antitoxine period and for a like period just before. Then, considering the number of patients in the hospital for these periods, and the average daily attendance, I found that during the period when antitoxine was in use the daily amount of alcohol for each patient was considerably less than half an ounce, while during the previous period it was two thirds of an ounce.

Regarding diarrhœa, from which Dr. Winters had said there had been trouble, none of the rest of them had seen it. If anything, there had been more trouble from constipation. The ward charts of perhaps a majority of the patients will show a record of laxatives ordered by the resident physician.

In his paper Dr. Winters has spoken of a very peculiar type of broncho-pneumonia which he attributed to the dissolving action of the serum on the blood. He has also spoken of the great amount of suppression of the urine, requiring various measures to relieve it, and of increase in albuminuria. Considerable stress also has been laid on cardiac weakness. We have seen no change in these respects in the hospital. The cases had been just about as they were before, so far as the general condition was concerned, but patients had recovered in greater numbers. They had not been able to say just why, but the mortality had been less. The death-rate in 1894, previous to the use of antitoxine, had been about thirty-four per cent. In 1895, under the antitoxine treatment, it was about twenty-six per cent.

Dr. Winters made a comparison at the last meeting which was a little misleading. The figures for intubation the past year, since the introduction of antitoxine, had given a mortality of seventy-two per cent., as compared with eighty-five per cent. in 1894. Dr. Winters had not been very much impressed with this apparent reduction of the mortality to seventy-two per cent., as he stated that a former resident physician at the Willard Parker Hospital had obtained a mortality of only fifty per cent. in *laryngeal* cases. Note the difference: *laryngeal* cases, not cases of intubation. Dr. White had made that report, and he did not allege a mortality of only fifty per cent. in intubation cases. I do not know what is the exact mortality of laryngeal cases during the use of serum, but I believe it is between forty and forty-five per cent.

Dr. Winters had spoken of so many cases coming in since January, 1895, with nothing in the throat, but I have found that according to the records one third of all the patients in 1894, before the use of antitoxine, had had no membrane, or but a small amount, attached to the tonsils. During the spring and the autumn of 1894 I was in the habit of taking students to the hospital, and on asking the resident physician: "What have we to show the students to-day?" I was met over and over again with the reply that there were two or three new cases, but with nothing in the throat.

It was curious that in this new disease described by Dr. Winters there had been no post-mortem findings. Many post-mortems have been made during the last year. I have attended many, and Dr. Winters has also, and portions of the organs were secured by Dr. Winters for private examination. I expected to hear the results of the autopsies and histological investigation. Perhaps these were included in the portion of the paper not read. In my opinion, the lesions were such as had been seen before the use of antitoxine—broncho-pneumonia, fatty degeneration of the heart, and nephritis.

A report by Kolisko, of Vienna, on this subject is very instructive. Kolisko has been professor of pathology and pathologist to the University of Vienna since 1882. He had made some thousands of autopsies in diphtheria cases. Since the use of antitoxine he had made seventy-five autopsies, and was convinced that the serum influenced the diphtheritic process most favorably. The membrane was more easily separated, and was often loosened. The same thing had been seen before the use of antitoxine, but never to the same extent or so soon after the onset of the disease. It was necessary, however, that a certain period of time should have elapsed after the injection, and that the dose should reach a certain amount, for if it was too small, separation of membrane would not be observed. When the process had penetrated deeply, the effect was less marked or *nil*. The anatomical changes in the internal organs were the same—broncho-pneumonia, fatty heart, changes in the kidneys.

Kolisko also stated that at times, before the use of antitoxine, all cases would show nephritis, then there would be a period when there would be none, and it was so since the use of antitoxine. He was positive that antitoxine had no effect in producing nephritis. Kolisko lays stress upon the important clinical fact that the diphtheritic process may remain localized at some hidden point, as in a crypt of the tonsil, or in the nasal cavity, and then suddenly break out with great virulence and lead to a fatal termination. Such cases illustrate how we may be deceived when we believe that we are injecting a patient on the first or second day of the illness.

Dr. Winters quoted a number of the physicians attached to the hospitals of the health department as expressing themselves unfavorably to antitoxine. Some of the physicians had gone so far as to say, according to his quotation, that they knew of patients who had died from the use of anti toxine. It would seem to prove that Dr. Winters does not realize the significance of his own utterances when he attributes such statements to men who hold official places under the health board. I have been told by many of these men that Dr. Winters had not altogether understood their views.

I shall now refer briefly to the evidence collected by Dr. Winters in Europe. Regarding some who were supposed to be the opponents of antitoxine, Hansemann, who was supposed to reflect the opinion of Virchow, had had nothing more to say when Virchow, on observing the results at the Berlin Children's Hospital, was so struck by those results that he was compelled to change his opinion, and became a convert. Kassowitz, of Vienna, was a disbeliever after an experience with eight cases, but he had had nothing to say since, after having been answered by Widerhoefer. Lennox Browne had once been a strong opponent of antitoxine, and is probably still skeptical. Two of the men quoted by Dr. Winters as having been opposed to antitoxine, one in Paris and the other in England, were young men, and had not had that experience with diphtheria previous to the introduction of antitoxine to enable them to appreciate the improved results under the latter. Variot, who has been represented by Dr. Winters as a firm believer in antitoxine, but now opposed to it, has always been inclined to dwell upon the unfavorable side of antitoxine, as is shown by the simple titles of his papers.

Toward the end of his paper Dr. Winters stated that all the earlier allegations for antitoxine had been abandoned. I can hardly believe that he really meant to go so far as that. I have looked over the literature of the last few months, and have here the strongest testimony from various parts of the world—Massachusetts, Germany, England, and Japan. These papers, from which I shall read a few extracts, all speak of favorable results from antitoxine, both in the treatment of diphtheria and when used for "immunizing" purposes.

In the foregoing analysis of Dr. Winters's clinical observations I have not attempted to estimate the exact value of antitoxine in the treatment of diphtheria. I have kept steadily in view the task I set myself at the outset, the task of proving that the children in the Willard Parker Hospital had not been injuriously affected by the administration of antitoxic serum. This purpose I believe I have accomplished. Incidentally, it has also been demonstrated that Dr. Winters's position with regard to antitoxine will not stand the test of critical examination. His descriptions of cases of antitoxine poisoning in the Willard Parker Hospital have no sound basis of fact, and they have not been confirmed by other observers, though they were published to the world more than a year ago.

Clinical Observations upon the Use of Antitoxine in Diphtheria; and a Report of a Personal Investigation of this Treatment in the Principal Fever Hospitals of Europe, during the Summer of 1895.—The following is an abstract of a paper read by Dr. Joseph E. Winters before the New York Academy of Medicine, May 21, 1895: Since Behring's treatment for diphtheria was proclaimed to the medical profession by Roux at the Budapest Congress, in 1894, sufficient time has elapsed to warrant our taking a careful analytical review as to what has transpired with reference to it. Behring's antitoxine was given to the world as a specific against the toxines of the diphtheria bacillus. It has no action on the bacillus; this is not destroyed by the antitoxine; it is not rendered less virulent; it is in no way influenced by the treatment. Behring has told us that his remedy has no influence on the poisons of other bacilli. Diphtheria in man scarcely ever occurs from a pure infection by the Löffler bacillus. Almost invariably we find in addition to the specific diphtheria bacillus streptococci, staphylococci, etc. The poisonous substances of the latter bacilli are in no way influenced by antitoxine. This fact limits very much the application of Behring's treatment to diphtheria in man. The toxine of Löffler's microbe causes the cardiac paralysis, the albuminuria, and the paralytic phenomena. These were to be prevented by the neutralizing effect of antitoxine. If antitoxine is an antidote to the toxine of the Löffler microbe, cardiac depression, death from cardiac paralysis, albuminuria, and post-diphtheritic paralysis should all be prevented by the action of this agent. It was to remedy these manifestations of the disease that Behring gave to the world his antitoxine. Behring told us his treatment, to be effective, must be applied early in the disease. To get the maximum effect, toxine and antitoxine must be applied at the same moment and at the same spot.

Armand Ruffer states that if you inject toxine on one side of the body and antitoxine on the other side at the same time, fourteen times as much is required to protect the animal; if there is a delay of an hour, a hundred times as much is required to protect the animal; and if there is a delay of eleven hours, five thousand times as much is required to protect the animal. In diphtheria in man we can never apply the antitoxine at the site of infection or at the moment of infection. A period necessarily intervenes from the time of infection until there are sufficient symptoms to call attention to the illness; and as the result of this there is a great limitation to the application of Behring's remedy to diphtheria in man. Another consideration of prime importance is: if

we are to attribute the reported decrease of mortality from diphtheria to the action of a specific, this decrease must be uniform and constant. There must be the same reduction in mortality in all parts of the world where the remedy is applied. For instance, a mortality of eight per cent. in Paris and twenty-eight per cent. in London does not mean that the low mortality in the former city is due to the treatment, but that it is due to a difference in the character of the epidemic, and that when Paris is visited by an epidemic of the same severity as the one that exists in London it will have the same mortality in spite of the treatment. Again, if there is at work but a single factor, viz., antitoxine, in the reduction of mortality, that reduction must be below the lowest mortality recorded in the natural history of the disease in any part of the world, and it must be steadily maintained below this rate in all parts of the world; otherwise, the variations in mortality may be said to be due to the epidemic character of the disease.

We find recorded the following divergencies in the deaths from diphtheria, owing to the differences in the type of the disease:

In New York, in 1884	1,090
" " " 1887	2,167
" Boston, " 1891	232
" " " 1894	817
" Philadelphia, in 1888	350
" " " 1889	375
" " " 1892	1,425

This rule of uniformity of results applies to reports by individual observers. If a hundred physicians report 5,000 cases of diphtheria treated with antitoxine, with a mortality of five per cent., and ten physicians report 500 cases treated with antitoxine, with a mortality of fifty per cent., the only logical conclusion is that there was a difference in the character of the cases in the two series; and that when the hundred physicians meet with a series of cases of the same type as those treated by the ten physicians, they, too, will have a mortality of fifty per cent.

The most misleading part of the antitoxine literature is the constantly quoted percentage of mortality. For instance, the mortality from diphtheria in the city of Boston in 1895 was 14·48 per cent.; in 1893, 32·49 per cent., and yet there were 112 more deaths from diphtheria in the city of Boston in 1895 than there were in 1893. The percentage mortality from Diphtheria in the Boston City Hospital in 1893 was 48·44, and in 1895, 13·21, and yet we find that there were 203 deaths from diphtheria in the Boston City Hospital in 1893, and 207 deaths in 1895.

Boston City Hospital.

Year.	Cases.	Deaths.	Per cent.
1893	419	203	48·44
1894	598	266	44·48
1895 (antitoxine)	1,566	207	13·21

From the foregoing it is readily seen that the percentage mortality is not only misleading, but absolutely worthless, unless accompanied by the actual number of cases reported and the actual number of deaths; and the report must also include a series of years in order to enable the reader to compare present results with the results in previous years when there was a mild type of the disease. Reporters on the antitoxine treatment have ingeniously compared the years of highest mortality instead of including all years.

At the beginning of the antitoxine treatment Behring told us that all patients treated on the first day of the disease could be saved; of those coming under treatment on the second day, nearly all; and of those brought under treatment on the third day, the larger part. Behring's words were: "We have it in our hands to reduce the mortality from diphtheria to one tenth of its former rate." Let us see how this promise of Behring's has been verified.

At the Willard Parker Hospital, during the first nine months of 1895, the results were as follows:

	Cases.	Mortality, per cent.
First day	108	10·09
Second day	130	25·19
Third day	116	34·19

[The author then cited cases. Commenting on them he said:]

These histories are of cases brought under treatment in the early part of the disease, many of them on the first or second day. The patients had full doses of a supposed specific, and we do not find recorded in the clinical histories one statement which would indicate that this specific modified in any particular a single manifestation of the disease, either in the laryngeal or in the non-laryngeal cases. Not one item in the clinical records can be found to indicate that any one of these patients was in any way benefited by the antitoxine. This is particularly noticeable in the laryngeal cases. Patients brought in without evidence of very marked croup, and after receiving full doses of antitoxine, had to be intubated twelve and twenty-four hours after the hypodermic use of this so-called specific. The clinical records of these cases are totally against the use of antitoxine in the treatment of diphtheria. A careful study of these records will, it seems to me, convince one who is familiar with diphtheria that there are clinical features here recorded which are due to the treatment and not to the disease. These features are referable to the kidneys, nervous centres, temperature, and respiratory organs. The numerous cases quoted from journal literature, showing the injurious effects of antitoxine, are many of them exact counterparts in their clinical course of the Willard Parker Hospital cases here reported, and taken together are confirmatory of the view that antitoxine may prove an immediate fatal poison, even when given in "immunizing" doses; that it may cause nervous phenomena, convulsions, etc.; that it may cause anuria, nephritis, albuminuria, hæmaturia, cardiac collapse, high and uncontrollable temperature, probably due to septic processes, septic pneumonia, subcutaneous hæmorrhages, petechiæ, arthralgia, joint effusions, intestinal hæmorrhages, fœtid diarrhœa, etc.

In New York and elsewhere it has been maintained in defense of the serum that the unfortunate ill effects in the form of high fever and suppuration are due to streptococcus infection; but if this were really the case they should supervene while the morbid affection was in process of evolution in the throat; whereas, they usually supervene after the disappearance of all throat lesions. It is now stated that the bad effects which formerly resulted from the use of antitoxine were due to the amount of serum injected, and that with the use of a more concentrated serum there would be less pneumonia and bad after-effects than formerly. This is a very weak admission. It is an admission that there are bad effects from the serum. One year ago it was asserted most positively by the advocates of this treatment that there were no bad effects—that it was absolutely harmless in doses of any amount.

[The author then cited cases from the private practice of several physicians.]

Mortality in the Willard Parker Hospital.

Year.	Cases.	Deaths.	Per cent.
1894 (non-antitoxine)	699	205	29·32
1895 (antitoxine)	778	190	24·42

Could those cases be eliminated which gave no clinical evidence of diphtheria, the mortality of 24 per cent. for 1895 would be greatly increased.

Dr. Ewing made an investigation in the Willard Parker Hospital with reference to the influence of antitoxine on the blood. His investigations included fifty-three patients with diphtheria. Fifty of these were injected with antitoxine; nineteen died, a mortality of 38 per cent. Dr. Ewing's investigation in the hospital was in cases in which there was clinical evidence of diphtheria; and my impression is that this report (38 per cent. mortality) would fairly well represent the actual mortality of the Willard Parker Hospital at the present time under serum therapy, if patients who have clinical evidence of diphtheria were subjected to this treatment to the exclusion and elimination of those cases which have no clinical data to warrant the diagnosis of diphtheria. In order to determine the result with reference to larger or smaller doses of serum, it was decided in the autumn of 1895 to give to alternate patients as admitted into the hospital doses of serum of 1,000, 2,000, and 3,000 units respectively. There were two series of cases, known as mild and severe, having 2,000 and 3,000 units respectively. In the two series of cases marked "severe," having 2,000 and 3,000 units respectively at a dose, there were twenty-three patients in the series having 2,000 units, of whom seven died (mortality, 30·4 per cent.); and there were twenty-two in the series marked "severe," having 3,000 units; of these eleven died (mortality, 50 per cent.). In the two series marked severe, the cases were probably of nearly equal severity, inasmuch as they were alternate cases as received into the hospital, the mortality being higher with the larger doses of serum in a series of parallel cases. Since these experiments no child has received doses of 3,000 units. In this series of experimental dosing there were 94 cases, 24 deaths—mortality, 25·5 per cent. Children under two years in 1894, 163 cases, 84 deaths—mortality, 51·5; in 1895 (antitoxine year), 153 cases, 95 deaths—mortality, 62·1 per cent.

At the very time of life when diphtheria is most dangerous we have in the Willard Parker Hospital a mortality of 10·6 per cent. greater with antitoxine treatment than without.

Antitoxine in the New York Foundling Asylum.—Professor J. Lewis Smith has reported thirty-one diphtheria patients treated with antitoxine in the New York Foundling Asylum—twelve on the first day, seventeen on the second or third day, two on the fourth or fifth day, and seventeen died—mortality, 54·8 per cent. Mortality in the New York Foundling Hospital in 1894 (non-antitoxine year), 24 per cent.; in 1895 (antitoxine year), 45·7 per cent.

The Municipal Hospital, Philadelphia.—During the year 1895 there were 606 cases of diphtheria treated; 302 of the patients received serum; 404 were treated without serum. No patient was injected who had been ill more than four days at the time of admission to the hospital. Patients whose cases were considered hopeless on admission did not receive serum treatment; all patients that were considered hopeless and brought to the hospital were placed with the non serum-treated ones, and some of these died within an hour after admission. The mortality in the 302 cases treated with serum was 28·1 per cent. The mortality in the 404 cases treated without antitoxine was 25·9 per cent. The cases treated with serum had the same local antiseptic treatment and the same internal medication and stimulation that were given to the series of non-serum-treated cases, and yet, with a so-called specific added to the treatment in a far more favorable series of cases, there is a higher death-rate than in those not treated with serum.

Results in the Blegdam Hospital, Copenhagen.—Fifty-one cases of severe diphtheria treated with serum, forty-six cases of severe diphtheria treated without serum, during the same period—mortality, thirty-three per cent. in both series. The average age of those treated without serum was lower than of those treated with serum. At the time of admission to hospital complications were more pronounced in the cases treated without serum, the air-passages being affected in eight cases, while with those treated with serum it occurred only three times. Severe complications of the kidneys (after admission to the hospital) were observed only in those treated with serum. The serum was used earlier in the fatal cases than in the cases which ended in recovery. That is, the day of the first injection was, on an average, earlier in the fatal cases than in the successful cases. From our experimenst we can not see any favorable action of the serum. On the other hand, we observe more severe hæmorrhages, albuminuria, nephritis, toxic anuria, fever, eruptions, etc., in those treated with serum. The serum was also used in croup cases complicated by severe diphtheria, and in mild cases of croup for the purpose of preventing stenosis. The mortality in all cases with and without operation was twenty-eight per cent., and for cases of operation forty per cent.; but during this same period there were eighty-seven patients with croup that were not injected; the mortality in these for all cases was twenty-five per cent., and for cases of operation, thirty-eight per cent.—therefore, lower than in those not treated with serum. Severe diphtheria complicated with croup did very badly with this treatment. All such patients died, and the good result in milder cases is explained by the good type of the present epidemic.

Report of the Medical Superintendents of the Metropolitan Asylums Board (London), 1895.—This report embraces 2,182 cases of diphtheria treated with antitoxine, with 615 deaths—mortality, 28·1 per cent. The medical superintendents compare this report with that of 1894, when 3,042 cases of diphtheria were treated in all the hospitals of the board without antitoxine, with 902 deaths—mortality, 29·6 per cent.; but we find in the Northwestern and Southwestern Fever Hospitals of London the following results to compare with the antitoxine statistics:

Year.	S. W. Hospital.			N. W. Hospital.		
	Cases.	Deaths.	Per ct.	Cases.	Deaths.	Per ct.
1892	463	93	22·5	682	138	21·8
1893	585	159	27·1	1,249	332	26·5
1894	546	156	28·5	1,147	309	26·9
	1,594	408	25·5	3,078	779	25·3
1895 (antitoxine)	316	94	29·7	363	117	32·2

In the Southwestern and Northwestern Hospitals:

	Cases.	Deaths.	Per cent.
1892–'93–'94	4,672	1,187	25·4

In all the hospitals:

	Cases.	Deaths.	Per cent.
1895 (antitoxine)	2,182	615	28·1

There were 225 tracheotomy cases in all the hospitals of the Metropolitan Asylums Board in 1895, treated with anti-

toxine, with 113 deaths—mortality, 50·2 per cent. During the year there were 30 tracheotomy patients in these same hospitals that did not receive antitoxine; 12 deaths—mortality, 40 per cent., 10·2 per cent. lower without antitoxine than in those treated with antitoxine. This is just the result to be expected when a depressant like antitoxine is added to the treatment of cases of diphtheria so serious as to require tracheotomy. It can not be said that the tracheotomy cases which were not treated with antitoxine were mild cases. The tracheotomy cases treated with and without antitoxine during the year 1895 were cases of the same degree, and offer a very good field for comparison of results.

At the Northwestern Hospital, during 1892–'93–'94, there were 215 tracheotomy cases with 124 deaths—mortality, 57·6 per cent. During 1895 there were 28 tracheotomy cases in this hospital treated with antitoxine, with 18 deaths—mortality, 64·2 per cent. During the year 1895 there were 4 tracheotomy cases in the Northwestern Hospital treated without antitoxine; all the patients recovered. Nothing could be more conclusive of the depressing and dangerous effect of the antitoxine in that severe form of diphtheria of the larynx and trachea which necessitates tracheotomy than the records of the Northwestern Fever Hospital for the years 1892–'93–'94–'95.

Antitoxine in Laryngeal Diphtheria.—About the only contention made for antitoxine at the present time by its advocates is that it has a favorable influence in laryngeal diphtheria; that it relieves stenosis; that it obviates the necessity for operative interference; that the mortality is lower in cases without operation and cases with operation treated with serum; that the tube can be removed earlier when an operation becomes necessary. If antitoxine does not cause a "melting away" of the membrane, as was at first stated, and does not lessen the duration of the membrane in the visible portions of the throat, what reason have we for supposing that it influences the duration of the membranes in the larynx? The mortality in the Willard Parker Hospital for the first nine months of 1895 in intubation cases treated with antitoxine was 68 per cent., and for the last quarter 76·9 per cent.; during the first quarter of 1896, 67·7 per cent.; in April, 72·7 per cent.; May, 75 per cent. In the Municipal Hospital, Philadelphia, there were in 71 intubation cases treated with serum, in 1895, 40 deaths—mortality, 56·3 per cent. Wiederhofer gives a mortality of 43 per cent. in intubation cases before the serum treatment.

Von Ranke, in 326 intubation cases, reports a mortality 57·4 per cent. before the serum treatment; Meisenbach, 57 per cent. in tracheotomy cases in the Philadelphia Children's Hospital, before the serum treatment.

In Strassburg, in 397 tracheotomy cases (1891–'94) the mortality was 44·3 per cent.; in Geneva (1872–'88), 49 per cent.; in the University College Hospital (London), in tracheotomy cases in 1894 (non-antitoxine year), 47 per cent.

Is not the very high mortality in intubation cases treated with antitoxine in the Willard Parker Hospital, when compared with the results in intubation cases without antitoxine in the Municipal Hospital, Philadelphia, and the intubation cases reported by Wiederhofer and von Ranke before serum treatment, and in tracheotomy cases in Philadelphia and in all parts of the world, before serum treatment, a most positive warning against the use of this treatment in this serious and dangerous form of diphtheria? Why is it that antitoxine has to-day the hold on the profession which it has? The fame of antitoxine is largely due to the influence of two hospitals, the Empress Frederick Hospital, Berlin, and the Hospital for Sick Children in Paris. We find that the Empress Frederick Hospital received 875 cases of diphtheria during fourteen months and a half of serum treatment, and that there had been received into the same hospital during the previous four years only 1,063 cases of diphtheria. It is owing to this increase in the number of cases of diphtheria in the various hospitals, and the increase in the number of cases reported as diphtheria, as the result of the bacteriological diagnosis in various cities of the world, that antitoxine is reputed to reduce the death-rate of diphtheria. A careful examination of the subject reveals the fact that the actual number of deaths has not been lessened, but, as stated at the outset of this article, the fame of antitoxine rests on the reported decreased percentage mortality. We find, on examination of the reports from various cities and hospitals, just what was pointed out with reference to the city of Boston as a whole and of the Boston City Hospital, that the actual number of deaths has not been lessened.

The Diagnosis of Hip Disease.—In an article on this subject in the *Nord médical* for June, M. Phocas says that the onset of the disease is not always easy to determine. The most frequent symptoms in the beginning are spontaneous or evoked pain radiating from the region of the knee, limping, and muscular fixation. Pain dominates all the other symptoms in the initial stage of the disease, for it is owing to the pain that the muscles, by a sort of defensive contraction, immobilize the pelvis and prevent the movement of flexion of the thigh independently of the pelvis. It is pain also which, directly or indirectly by exacerbation during the movement and by the muscular contraction that it causes, produces lameness. This lameness is either imperceptible or very pronounced.

Pain is always the principal symptom of the initial stage, says M. Phocas, and it is localized in and radiates from the knee, and is more or less acute. The presence of these symptoms is sufficient to reveal at once undoubted coxalgia. By coxalgia, says the author, is meant a disease which is characterized by tuberculosis of the bones of the joint and the production of fungosities. This affection at the present day is the commonest form of hip disease. It has a chronic and peculiar evolution. There are, however, other articular affections which may appear in the region of the hip, and, although not so frequent as tuberculous coxalgia, they are occasionally observed in infancy. Among these affections, some are easily recognized, and their diagnosis is not difficult, such as rheumatism, dry arthritis, etc.; others manifest themselves less distinctly, especially at the onset of the affection, and may easily lead to a wrong diagnosis; for instance, hysterical coxalgia or growing pain may be mistaken in the beginning for true tuberculous coxalgia.

M. Phocas relates the histories of three cases which came under his observation to illustrate how easily an error may be made in diagnosis. The patients presented the classic symptoms of coxalgia at the onset, but rest in bed was alone sufficient to bring about a rapid recovery; so, he says, it could not be reasonably supposed that true coxalgia existed.

It is very difficult, he remarks, to make a positive statement in regard to each particular case, for in two of the cases, in which the trouble simulated coxalgia, it was simply a question of growing pain analogous to that described by Bouilly as the fever of growth. The children had grown rapidly, and in them, it is reasonable to suppose, there was a certain morbid over-activity of the cartilages. In the third case the patient, a young girl, after having experienced all the symptoms of an onset of coxalgia, recovered rapidly. There were no symptoms of hysterical coxalgia, and the disease was characterized by the complete absence of muscular contraction

and by the presence of pain near the hip. This pain, however, had some peculiar characteristics. It was at first profound and then gradually became superficial, and finally external and diffuse. A curious fact, says the author, is that it was not spontaneous, but that it became very acute on pressure. The patient complained only of fatigue and spontaneous pain in the knee, the characteristics of which resembled those of the pain of hysterical coxalgia, but they were not sufficient to permit of a positive diagnosis. M. Phocas states that he is inclined to think that the girl, whose parents were rheumatic, had a slight arthritis of the hip which was ameliorated by the rest in bed, and in the end revealed hysterical characteristics.

The onset of coxalgia, however, says the author, may be simulated by a transitory affection of the hip. Not only hysterical coxalgia, but a slight rheumatic arthritis, or growing pains may lead to an error in diagnosis. M. Bézy, says the author, has called attention to a case of infantile paralysis which simulated coxalgia and pseudo-hysterical coxalgia. The most important thing to be considered, however, he says, is that transitory affections, in which the prognosis is benign, are capable of simulating coxalgia.

The Employment of Carbonic Acid in the Treatment of Anosmia.—At a recent meeting of the Société française d'otologie, de rhinologie et de laryngologie, a report of which appears in the *Revue internationale de rhinologie, d'otologie et de laryngologie* for May, M. Joal read a paper on this subject in which he remarked that anosmia was an affection for which medical advice was very often sought, as it led to such serious consequences among wine merchants and wine brokers. Generally, the various methods of treatment recommended by authors did not furnish very satisfactory results, apart from cases of recent date attributable to inflammatory troubles of the pituitary membrane. Sir Morell Mackenzie, said M. Joal, expressed himself as follows on this subject: "In true anosmia which depends on nervous alteration all medication has been without effect up to the present time. When it depends upon nasal catarrh a favorable prognosis may be given; nevertheless, I do not know of any case of anosmia in which recovery lasted for two years or longer." Moure also wrote: "If anosmia can be connected with any le alteration on direct examination, it is greatly to be feared that the loss of the sense of smell will be definitive."

M. Joal stated that, in his experience with the treatment of this disease, nothing but failure had resulted in the majority of cases that he had met with. In two cases, however, a detailed account of which was given, recovery had been obtained by the use of carbonic-acid gas in the form of a nasal douche. The results, he said, were very satisfactory, for the patients had been able to return to their occupations with the sense of smell and that of taste fully restored.

Although very little used at the present day in nasal affections, carbonic-acid gas has been employed formerly; for Herpin wrote in 1864: "Douches or injections of carbonic-acid gas have been successfully used in certain affections of the pituitary membrane; in cases of suppuration it corrects and diminishes the bad odor, and it favors and hastens recovery." At the present day, said M. Joal, works on rhinology did not devote a single line to the study of the curative properties of this therapeutic agent.

M. Joal drew attention to the irritating effects which were caused at first by the carbonic acid, and then to the resolvent action afterward, when it came in contact with the nasal mucous membrane. He thought that physicians could make use of this treatment with advantage, particularly in chronic inflammation of the olfactory region of the mucous membrane, a region, he said, in which treatment was very limited, whether with instruments or with douches. He further said that he had made daily use of this treatment with good results, and that he had been able to cause the disappearance of vaso-motor attacks and arrest the progress of acute coryza; he had also obtained favorable results in cases of hypertrophic rhinitis in which irrigation could not be done.

This treatment could be carried out, said M. Joal, by the following simple procedure, which was within the reach of every one: A siphon was turned upside down and the valve pressed in order to allow the liquid which was above the extremity of the lower tube to run out. At the top of the outlet a rubber tube about twenty centimetres in length, on the end of which a nasal cannula was attached, was placed, and the apparatus was ready for use. The cannula was introduced into the nostril and the valve pressed gently, and the carbonic acid then penetrated the nasal fossæ; or the valve might be brought near the nostril so that the patient could inhale the gas with strong inspirations, and in this way it was drawn through the respiratory and olfactory parts of the nasal passages. This, said M. Joal, was not an expensive or complicated therapeutic measure, and its employment could be recommended in all stages of a violent cold in the head.

The Treatment of Simple Chorea.—In the *Indépendance médicale* for June 3d M. Grancher recommends the following therapeutic measures in simple chorea: The treatment may be divided into two classes, hygienic and medicinal. The first consists in living as much as possible in the open air and in gymnastic exercises. The second consists in the use of antipyrine and Boudin's solution.

The action of antipyrine, says M. Grancher, is certain in chorea, as it shortens the duration of the disease. This, he says, has been recently confirmed by observations in a work on the subject by one of M. Marfan's pupils. In comparing the duration of chorea not subjected to treatment with that of chorea treated by antipyrine, the author of this work has shown that it was greatly lessened in the latter case, and that recovery occurred in from twenty-five to thirty days.

Boudin's solution exerted the same influence as the antipyrine, but in a more pronounced manner. This medication, however, continues M. Grancher, requires careful and discriminating handling, otherwise very serious mistakes may be made; mistakes that would be detrimental not only to the health, but to the life of the patient. The following rules in regard to its administration should, therefore, be carried out; it must be borne in mind, also, that this solution is a mixture of arsenious acid, one part of which is equivalent to a thousand parts of the solution. The daily amount at first is sixty grains of the solution to four ounces of water, and this is taken in divided doses during the day. It is then increased by thirty grains of the solution every day, until intolerance is shown, without exceeding four hundred and fifty grains of the solution. Intolerance is shown by loss of appetite, vomiting, and diarrhœa. When these symptoms appear the amount should be gradually diminished, and usually a diminution of sixty grains will be sufficient to cause the disappearance of them. After they have disappeared, the progressive doses may be repeated, and recovery will usually be obtained within eight or ten days.

An interesting fact, says M. Grancher, is that recovery does not really take place until the symptoms of intolerance are manifested; from the moment that the organism is to a certain extent saturated with the medicament.

When recovery is assured the treatment must not be stopped suddenly, but the amount of solution must be gradually diminished until complete suppression is reached.

As Boudin's solution is very active, it must be employed prudently, and should not be prescribed unless full reliance can be placed on those who take care of the patients to follow implicitly the directions laid down for its administration. For this reason M. Grancher says that he never prescribes this medicament in cases where antipyrine may be employed with equally good results, although recovery may not be obtained so rapidly.

An Arrow Wound of the Parotid Region.—The *Union médicale* for May 30th contains the following account of a case which came under M. Rochard's observation: The patient was an archer who had been struck by an arrow which penetrated the parotid region. It cut through the facial nerve and became lodged in the pterygomaxillary fossa to a depth of about seven centimetres without causing the least hæmorrhage or any vascular lesion. The arrows which were used were fifty centimetres in length and they were shot from a distance of fifty metres with sufficient force to cause them to disappear entirely into very compact bottle-shaped bundles of straw which were placed directly behind the target.

The arrow struck the patient directly in front of the left tragus, and was driven into the face with such force that it could not be withdrawn, and it had to be broken off close to the tip which had disappeared into the man's face. The wound was scarcely two centimetres in length and was situated directly in front of the external auditory canal; there was complete left facial hemiplegia. An exploration of the buccal cavity revealed nothing particular, and the movements of the lower maxilla were free. The probe penetrated to a depth of four centimetres, when it struck a hard body which was deeply imbedded in the flesh. Chloroform was administered, the wound enlarged, and a forceps introduced. The hard body was then seized and extracted, not without a certain amount of violence, which, however, caused no hæmorrhage. The tip of the arrow measured four centimetres in length and one centimetre in width. It had penetrated behind the condyle of the lower maxilla, entered the parotid space, cut the facial nerve, and finally been arrested in the pterygomaxillary fossa.

The examining finger distinctly felt on the outer side the ascending branch of the lower maxilla, and on the inner side a bony apophysis from which ligaments and muscles sprung; this was the styloid process and Riolan's bundle of muscles and ligaments.

Some pus had formed in the wound, and bathing with corrosive sublimate was practised, after which the wound was packed with iodoform gauze. Three days afterward nothing was observed but facial paralysis, and the patient was able to return to his home.

There are two particularly interesting points in this case, says M. Rochard: First, the force with which the arrow penetrated the face, and, second, the curious course it took. The diameter of the arrow would scarcely allow it to pass between the neck of the condyle and the mastoid, yet the penetration had occurred. Furthermore, he says, it is curious that such a pointed body could thus enter the parotid region without causing greater injury. The facial nerve had been cut, it is true, but it was strange that the external carotid or one of its branches had been spared as well as the internal carotid. It was in the direction taken by the arrow tip, which, instead of penetrating the parotid in a direction perpendicular to its external surface, entered obliquely and passed through the parotid space and from there became lodged between the internal pterygoid and the muscles which are inserted into the styloid process.

Medical Nomenclature.—In an editorial in the June number of the *Archives of Pædiatrics* the writer remarks that if Shakespeare had been a doctor of medicine in active practice he would never have asked, "What's in a name?" He would have known that *gastrodynia* was far more impressive than simple *colic*, and that any person would suffer from *scabies* with greater equanimity than from *itch*. He would have known that *German measles* was the worst possible name that could be applied to a disease which is not measles and has no relationship to it. The worst error in nomenclature for the practitioner is the application to a simple disease of the name of a more serious disease with a modifying adjective. The noun is sure to be remembered, the adjective is soon forgotten. Tell a mother that her child has German measles, explain it ever so carefully, and she will be sure to remember the *measles* and promptly forget the *German*. Her children will be among those who have two attacks of measles, and some doctor in the future will be misled and diagnosis will be rendered difficult. We have no plan for correcting the evil, however, the writer continues. Words become fixed in their use and it is difficult to change them. Unfortunately, in this instance, there is no common word which can be used. Rubella means nothing to the average layman, scarlatina is a rank misnomer, roseola is but little better, and the average doctor does not know how to pronounce Rötheln.

The Use of Ovarian Derivatives in the Treatment of Morbid Conditions Due to Loss or Defect of the Ovaries.—Dr. Mond, an assistant physician to the gynæcological clinic of the University of Kiel (*Münch. med. Woch.*, 1896, No. 14; *Dtsch. Med.-Ztg.*, June 1, 1896), remarks that Werth was the first to invoke the aid of organotherapy in the ills incident to the natural loss of function of the ovaries or to mutilating operations affecting them. At his request, Mr. E. Merck, of Darmstadt, furnished three preparations: 1. The substance of entire ovaries. 2. The substance of the ovarian cortex. 3. A precipitate from the contents of the follicles. One of them is in the form of tablets containing about four grains each of sodium chloride and ovarian substance. This preparation Dr. Mond has employed experimentally in cases of entire or partial removal of the internal genital organs, in cases of natural climacteric, in cases of amenorrhœa dependent on atrophy of the generative organs, and in one case of rudimentary uterus with hypoplasia of the ovaries. In all, the cases were ten in number. Of this number, there were two in which not only was no good result observed, but the tablets were not well borne. More or less pronounced improvement took place in the eight other cases, consisting for the most part in the abatement of general symptoms, such as headache, sleeplessness, loss of appetite, a feeling of anxiety, palpitation of the heart, etc. In many cases the symptoms yielded to from twenty to sixty tablets first prescribed, so that the patients asked for more. The author considers the number of his observations too small to warrant him in positive statements concerning the value of "ovariin," but thinks his results justify its further employment.

The Rise and Fall of the Use of Blisters.—In the *Journal des praticiens* for May 30th there is a very interesting clinical lecture on this subject by M. H. Huchard, who remarks that the history of the fly blister is very instructive and suggestive because of the constant fluctuations that treatment by

means of it has undergone during the past two thousand years. In a very remarkable work by M. Galippe, he says, that author states that Hippocrates, prompted by the action of cantharides on the bladder, recommended it in paralysis of this organ; that Galen attributed to it a diuretic power which was afterward recognized by Amatus Lusitanus, Mercurialis, and Thomas Willis, and that it was employed in dropsy by Scultetus and Cappivaccio.

In the fourteenth and fifteenth centuries it was employed by Antoine Cermison; in the seventeenth century Sydenham recommended it especially for the epidemic fevers of 1694. Freind thought that rebellious fevers were not easily controlled without the intervention of these blisters. The best method, according to Sydenham, of combating the fever in epidemic coughs symptomatic of pleurisy and peripneumonia was to bleed from the arm, apply blisters on the nape of the neck, and give an enema every day. He also recommended the use of blisters in dropsy and small-pox. Huxham, in the eighteenth century, observed the same practice in the latter disease, and stated that in peripneumonia the use of blisters should not be neglected, as they were useful not only for their attenuating and stimulating properties, but because they caused the evacuation of a part of the morbific material.

In the nineteenth century the use of the fly blister was continued by Bouillaud, who declared his absolute belief in its efficacy in acute diseases of the lungs; by Velpeau, who stated that by this treatment erysipelas and diffuse phlegmon could be arrested; by Pidoux, who referred to a cure in a case of pulmonary phthisis which had been obtained by this treatment; by Grisolle, who, although not so enthusiastic, wrote that there must be some good reason for a practice that was so universally emphasized; by Jules Besnier, who, in the *Journal de thérapeutique*, in 1876, spoke highly of the good results of this revulsive in all stages of pleurisy; and by Peter, who insisted on the efficacy of revulsive medication and applied large or small blisters in many diseased conditions.

The decadence of the fly blister began during the time of Van Helmont, who regarded this method of treatment as very harmful. In 1591 Massaria wrote a work entitled *De abusu medicamentorum vesicantium*, etc. A century later Baglivi, in his celebrated thesis on the use and abuse of blisters, said of these revulsives that they were dangerous in fever and often fatal in delirium. Van Swieten employed them in pleurisy only after the fever had disappeared, and for excessive pain; he thought they vitiated the humors and favored the purulence of effusions. In 1776 Masdewall expressed the same opinion. During the same century a number of works on the abuse of vesicants appeared, written by Crater, Bourden, Whytt (who stated that this treatment was debilitating and caused the suppression of expectoration), Busch, and Hartmann. Tessier also wrote a thesis on the uselessness, the inconvenience, and even the danger of the cautery.

In 1769 the subject was again brought up by Costenbader, who distinctly stated and determined the absolute contraindication of blisters in infectious diseases. During the same period Stoll, who recommended them for acute articular rheumatism, angina, and odontalgia, was cautious in prescribing them in the treatment of pleurisy and peripneumonia; he condemned their use in malignant fevers, in which, he said, they arrested the flow of the urine. In 1783 Tralles, although he recognized a certain merit in this treatment, cited several cases in which death had occurred after its employment.

In the present century the decadence of the blister was continued by Chomel, who condemned its use in typhoid fever, because it often constituted an unfavorable complication in the ulcerations which frequently followed its employment. Louis, in 1835, stated that this treatment had no power to arrest inflammation; Rostan said that it was a new evil to be added to those which already existed; Forget remarked that it was a sort of sacramental procedure employed out of obsequiousness; Valleix found it absolutely contraindicated in pneumonia; Rilliet and Barthez stated that they had never observed the least influence on the symptoms of pneumonia from this treatment; Trousseau said: "Never use remedies that are capable of doing harm, and the blister is one of them." Dauvergne published in 1879, in the *Bulletin de thérapeutique*, an article in which he said: "Is there not a danger in opening wounds when the tendency of modern science is the occlusion of those which exist or of those that are due to surgical intervention in order to avoid septicæmia, which is considered so dangerous"? Louis wrote that, from some points of view, blisters caused inconveniences only, without any advantages to counterbalance them. Archambault stated that he was absolutely convinced of the bad influence of this treatment in a large number of cases, and that he was not sure that he had ever observed any good results from its employment, but that he was very certain it often caused a great deal of harm.

With regard to facts, says M. Huchard, Quiet, in 1846, reported the cases of two children who had died after repeated applications of fly blisters. In 1848 Bouillaud, who had strongly advocated their use, published an article in the *Revue médico-chirurgicale* on albuminuria due to cantharides, and described the autopsy of a patient who had died after the employment of this treatment. M. Gallipe reported two cases, in one of which the patient had died from cantharidal nephritis, and in the other the cause of death was poisoning which followed the application of a fly blister. In 1864 Guizot cited a case of pleurisy in which this treatment had been employed with a fatal result. At the autopsy the kidneys were found to be altered, and he thought that this alteration might be a contraindication to its use. Cornil, in his work on nephritis, referred to a patient who had an attack of pleurisy, and stated that he presented an abundant albuminuria after the application of these blisters. He mentioned the case of another patient who had been subjected to numerous applications of blisters, in whom albuminuria persisted for a year; in still another case albuminuria persisted for two years and finally caused the patient's death. Fonssagrives wrote that blisters might cause death, and he cited an instance which had come under his observation at the hôpital de Cherbourg. Peter also observed a case of broncho-pneumonia in which this treatment caused erysipelas and gangrene which resulted fatally. Many other cases are cited by M. Huchard in which this treatment brought disastrous results.

With regard to the field of experimentation, says the author, the same conditions are found. The majority of authors admit that blisters increase fever, although there are a few who think that the antithermic action of cantharides is conclusive. The author here refers to the renal lesions of cantharidism, which have been studied by Rodecki, Schachowa, Cornil, Brault, Toupet, and Longovoï, lesions, he says, which nearly always amount to those of a glomerular and diffuse nephritis. M. Galippe's experiments on this subject are very instructive and demonstrate the unfavorable action of blisters. From this it may be comprehended, says M. Huchard, why Galippe declared that he would have some reluctance in applying blisters.

Since for many years, continues M. Huchard, medical science has been divided into the detractors and the partisans of this treatment, it is necessary to conclude that the indications and contraindications should be distinctly laid down. The hasty and immoderate use of blisters applied one after the other produces accidents, but, he asks, What active treatment may not produce accidents? The experiments he cites are without doubt important from a toxicological point of view, but, he says, the toxic and the therapeutic action must not be confounded, and the effect of a large blister which is allowed to remain in place on the skin of an animal for four days can not be compared to the effect of a small blister which is allowed to remain on a human subject for from six to eight hours, and the wound is dressed with all antiseptic precautions.

Cantharides do not produce anæmia of the lungs; they congest the organ, and may determine, although rarely, a more or less complete renal impermeability by diffuse nephritis. The cutaneous wound, however, may become the cause of an infection of the organism, especially when it is badly dressed and when the treatment is too often employed. When we see, says M. Huchard, the more or less serious accidents that infections of cutaneous origin produce in children, when we consider the cases of ulcerative endocarditis which occur during the course of a common excoriated corn, etc., we ask ourselves if the employment of this treatment should not be subjected to exact rules. For these reasons he thinks that the following rules should be offered for consideration with regard to the application of fly blisters: 1. In adults, vesicant plasters should not be allowed to remain in place for more than eight hours; in children, for more than three hours. 2. The plaster should always be covered with a thin sheet of oiled paper, so as to prevent the too prolonged contact of cantharides after the removal of the plaster. 3. After it is removed, and in order to favor vesication, a starch poultice may be applied for twenty or thirty minutes. 4. The epidermis should not be removed any more than is possible. 5. These topical applications should not be repeated too often or at very short intervals. 6. The wound should be entirely covered with a cotton dressing, which is not to be replaced.

With regard to the indications for this treatment, says M. Huchard, blisters may be very cautiously employed as follows: In early infancy, although they are almost always contraindicated because of the facility of cutaneous absorption of pathogenic germs which are capable of determining fatal septicæmia; in older children who may suffer from eruptive diseases, as they often produce excitation and fever; the wounds, also, are often apt to become a source of secondary infections; in middle-aged and old people who may suffer from affections of the genito-urinary organs, or where there is a suspicion of cardio renal sclerosis which is often latent in the first stages of its evolution. It is the same with diabetes, and, says M. Huchard, in connection with this treatment, it must be borne in mind.

This treatment is contraindicated in all infectious and febrile diseases, for the following reasons: 1. Because the wound is often a source of general secondary infection or of local symptoms. 2. Because, according to Stoll, it arrests the normal flow of the urine, and it tends to obstruct the kidneys. 3. Because in certain fevers, such as typhoid fever, scarlatina, and pneumonia, renal complications are often determined. Caussade has shown the existence of nephritis in the latter disease, which may occur, although very rarely, before the pulmonary symptoms set in, often during the course of the disease, and sometimes after it.

The employment of vesicants in pneumonia, says the author, is always useless and frequently dangerous, especially in the acute stage—useless because pneumonia is not simply an inflammation, and dangerous for the reasons stated above.

In pulmonary phthisis it is useless to employ vesication, especially in the later stages, where it is absolutely powerless against tuberculous infection, and where it may further complicate the secondary infections that are so frequent and so dangerous in this disease, which are capable of causing renal complications.

In pleurisy, says M. Huchard, vesication should not be employed at all, as it may impede surgical action, which, made under bad antiseptic conditions near a suppurating wound, may transform simple pleurisy into a purulent form. In children the same contraindication is absolute, and still more so in febrile and infectious diseases.

In tuberculous meningitis this treatment is powerless, and the cases of recovery which are cited relate to pseudo-meningitis.

The indications for this treatment, continues the author, are as follows: 1. In certain surgical affections, such as salpingitis of long standing, chronic hydrarthrosis, etc. 2. In painful affections, such as neuralgia, etc. 3. In all inflammations of slow resolution, after fever has disappeared. 4. In certain nervous diseases where the æsthesiogenic action of the fly blister, as of all other revulsives, has been demonstrated by different authors.

The Anatomical Nomenclature of the Nervous System.—In accordance with the report of a committee on neuronymy, adopted unanimously by the American Neurological Association on June 5th, the following recommendations are promulgated: 1. That the adjectives *dorsal* and *ventral* be employed in place of "posterior" and "anterior," as commonly used in human anatomy, and in place of "upper" and "lower," as sometimes used in comparative anatomy. 2. That the cornua of the spinal cord and the spinal nerve-roots be designated as *dorsal* and *ventral* rather than as "posterior" and "anterior." 3. That the costiferous vertebræ be called *thoracic* rather than "dorsal." 4. That, other things being equal, mononyms be preferred to polynyms. 5. That the "hippocampus minor" be called *calcar;* the "hippocampus major," *hippocampus;* the "pons Varolii," *pons;* the "insula Reilii," *insula;* the "pia mater" and "dura mater," respectively *pia* and *dura*. 6. That the following be employed in place of their various synonyms: Mesencephalon, pallium, oliva, clava, operculum, fissura centralis, fissura calcarina, fissura collateralis, fissura hippocampi, cuneus, præcuneus, claustrum, fornix, infundibulum, vermis, hypophysis, epiphysis, chiasma, oblongata, lemniscus, monticulus, tegmentum, pulvinar, falx, tentorium, thalamus, callosum, striatum, and dentatum.

Fifty Clinical Observations on the Therapeutic Value of Aristol.—Dr. Eriberto Aievoli (*Incurabili*, 1896; *Wiener klin. Rundschau*, May 31, 1896) gives his experience in the use of aristol in fifty cases, mostly of suppurating wounds and varicose ulcers, but including some examples of suppurative adenitis, chilblains, and boils. He used it in the form of an ointment of the strength of from four to ten per cent. spread on sterilized gauze and applied to the affected part. He found it particularly efficacious in a number of cases of injury of the head; lacerated and contused wounds of the orbital border, such as often run a very tedious course, healed favorably and with striking rapidity, and in a comparatively short time the scar was hardly to be seen. In varicose ulcers of the feet the results were not quite so favorable, for the reason that most

of the patients could not take the necessary rest. An especially prompt action of the aristol ointment was shown in cases of ulcerating chilblain. The results were striking also in cases of burns; the author gives the histories of two cases of extensive burns of the second and third degrees in which the ointment produced rapid healing after other remedies had failed to accomplish anything. Stress is laid on the fact of the easy removal of the dressing. On the whole, the author thinks aristol is of greater therapeutic value than boric acid.

Steam in the Treatment of Chronic Endometritis.—Dr. Panecki, of Dantsic (*Therap. Mntsh.*, January, 1896; *Dtsch. Med.-Ztg.*, June 1, 1896), thinks steam preferable to other caustics for destroying the diseased endometrium. The caustic action of steam at the temperature of its generation, he says, is superficial if it is used for a brief application only; if it is applied for a long time or in a superheated state (heated to 248° F.), its action extends deeper. He says the method of its application is very easy and simple, so that the physician needs no assistant; moreover, it is entirely painless, and he has never seen it do any harm. So far as the abstract goes, there is no description of the apparatus or of the precise method of employing it.

Eucaine as a Local Anæsthetic.—Dr. Gaetano Vinci, of Messina (*Dtsch. Med.-Ztg.*, April 27th), has experimented, both in the laboratory and clinically, with two forms of eucaine hydrochloride—that crystallized from a watery solution and that crystallized from a methyl-alcohol solution. A solution of from two to five per cent., instilled into the eye of an animal, such as a dog or a rabbit, caused complete local anæsthesia in from one to three minutes. It began in the cornea, and spread thence to the conjunctiva, and lasted on an average from ten to twenty minutes. It was readily prolonged by repeating the dose. It was always accompanied by a slight hyperæmia and slight irritation of the palpebral conjunctiva. This, however, was the case only with the methyl-alcohol form; the watery solution caused at most a very slight hyperæmia. The pupil was not dilated and reacted well to light. Injected under the skin, eucaine caused complete anæsthesia of the part, so that a reflex could not be evoked even with a needle. A similar complete local anæsthesia of a mucous surface was effected when a eucaine solution was painted over it.

The general action of the drug, both in cold-blooded and in warm-blooded animals, consisted in a marked excitation of the entire central nervous system, followed by paralysis when toxic doses were given, going on to death. Even one thirty-third of a grain caused irritability, heightened reflexes, incoordination, and finally general paralysis in the animals experimented with. Small doses administered to mice and rabbits caused increased reflex excitability, and increased but weakened respiratory movements. Medium doses of from a third to a half of a grain to each thirty-five ounces of the animal's weight caused repeated tonic and clonic convulsions. The animals lay senseless on their sides, with dyspnœa, opisthotonos, and finally paresis of the posterior limbs. These phenomena were most marked when large toxic doses were administered; the convulsions returned continuously and affected all the muscles of the body. The animals finally died when the paralysis reached the respiratory muscles. When the dose was not a fatal one, the convulsions gradually ceased, the increased reflex excitability disappeared, and the paresis of the hind limbs slowly improved.

The author concludes that the effect of eucaine on the central nervous system is therefore at first excitant, and then, in the case of toxic doses, paralyzing. The paralysis is a central one, for if the sciatic nerve of a frog poisoned with eucaine is exposed and its peripheral end irritated with the induced current, the limb reacts in a normal manner.

As regards its action on the heart and the blood-vessels, the subcutaneous and intravenous injection of small and medium doses slows the heart's action on the average from twenty to thirty beats a minute, but without otherwise modifying the beats or increasing the blood pressure. This effect on the pulse is caused by the excitation of the central vagus; for section of the vagi causes an immediate increase of the pulse to the normal and above it, together with an increase of the blood pressure. Death occurs from paralysis of the respiratory centres, for the heart continues to beat for some time thereafter.

In all these points, says Dr. Vinci, eucaine is similar, physiologically, to cocaine. Yet there are some important differences which must not be forgotten. In the first place, eucaine is less poisonous than cocaine. While the animals treated with eucaine survived, those injected with the same doses of cocaine died. The pulse with eucaine is always decreased in frequency; with cocaine there is a primary acceleration. As regards their local action, the promptness of the anæsthesia, and its duration and intensity, there is no difference between the two substances. But eucaine causes no ischæmia; on the contrary, vascular dilatation occurs. A further difference is that the pupils are not affected; mydriasis does not occur, and the reaction to light remains normal.

Clinically, both preparations were employed in two-per-cent. solution and compared with similar cocaine applications. They showed that the two drugs were of like value in the human subject also, as regarded the rapidity, duration, and intensity of the anæsthesia. This is complete, progresses from the cornea to the conjunctiva, appears in from two to five minutes after the instillation, and lasts from ten to fifteen minutes. There is some hyperæmia, and there is slight irritation of the palpebral conjunctiva. Some patients complained of a slight transitory burning, but only when the methyl-alcohol preparation was used. The watery solution caused no by-effects save a slight, hardly noticeable hyperæmia. It is, therefore, the solution to be preferred for practical use.

Another difference of great importance was that eucaine did not, like cocaine, induce mydriasis and paralysis of accommodation. The pupil was not distended at all, and reacted well to light, and the accommodation remained normal.

This was a property of the greatest importance in practical ophthalmology and favored the employment of eucaine in cases in which a production of ischæmia with the anæsthesia was not required. In violent inflammatory conditions of the eye, eucaine also promptly produced anæsthesia, but the ischæmic action failed, and consequently for such cases cocaine would have the preference. Both drugs diminished the intra-ocular pressure about equally.

Its last advantage was that the eucaine solutions were permanent and did not, like those of cocaine, decompose when kept. Cocaine solutions were decomposed when they were boiled for the purpose of sterilization, thereby losing their property as a local anæsthetic, and the decomposition products had an irritant effect if such a solution was employed. Solutions of eucaine, on the other hand, did not suffer decomposition even when boiled for a long time.

Eucaine had thus been shown by experimentation on animals and on the human subject to have very marked local anæsthetic properties which rendered it worthy of being placed by the side of cocaine in ophthalmological practice.

Lectures and Addresses.

THE TREATMENT OF HÆMOPTYSIS.*

BY THOMAS J. MAYS, A. M., M. D.,
PROFESSOR OF DISEASES OF THE CHEST IN THE PHILADELPHIA POLYCLINIC, AND VISITING PHYSICIAN TO THE RUSH HOSPITAL FOR CONSUMPTION.

CONSUMPTIVES are in many respects a very peculiar class of patients. The hopefulness which is a part of their disposition and which almost always accompanies their disease, leads them to regard many indications of failing health in their own bodies with indifference, no matter how self-evident this may be to their relatives and friends. They feel out of sorts, experience a constant tiredness, and are perhaps a little more irritable than formerly. They also complain of an impaired or capricious appetite, lose in weight, become a little feverish in the afternoon or evening, have a slight cough and expectoration, and pass restless and dreamy nights; yet none of these symptoms seem to draw their attention to themselves until, greatly to their surprise, they are suddenly seized with spitting of blood. No matter how small the amount of blood may be that is brought up, there is nothing that will alarm or demoralize a patient more than this. This seems to bring him to his senses, for he now almost invariably seeks medical relief.

This is one kind of hæmoptysis which comes under observation. Another is that which occurs in the following manner: A patient may or may not have slight blood spitting at the beginning of his disease, and may go through its various stages to the point of excavation without any recurrence of this trouble. But all at once, and without any apparent reason, he is seized with a violent hæmorrhage—the blood gushing out of his nose and mouth—and he seems to be in imminent danger of bleeding to death.

These two kinds of hæmorrhages make up the principal types of hæmoptysis which are met in practice. The *first* emanates from a rupture of the bronchial or pulmonary capillaries, or from an extravasation or oozing of blood through and from the walls of these blood-vessels; and the *second* comes from a break in the walls of an exposed and unsupported aneurysmal artery or vein on the surface of a cavity. The difference between these two types mainly consists in the amount of blood which is lost to the body, and in the ease or difficulty with which the blood flow can be checked in each. Practically, the first deals with those cases which have no cavity, and, so to speak, are in the first stage of the disease; while the second comprises those cases which are burdened with a cavity and are therefore in the third stage of the disease.

The first aim in the treatment of hæmoptysis is to make the patient comfortable both physically and mentally. Place him at rest on his back in bed, and administer a dose of morphine and atropine hypodermically. If the bleeding does not come from a cavity, or does not appear too copiously, assure him that in reality the hæmorrhage has no serious significance; that the bleeding is not only harmless, but may be an actual benefit, since it unloads and relieves the congested condition of the affected area. This will tend to allay his fear and nervousness more than anything else, and if you succeed in doing the latter you will have gained an important point in the management of your case. Insist on keeping the patient quiet in bed, and above all avoid a physical exploration of the chest at this time, since the shock coming from percussion, and the strain on the lungs due to forced breathing, will serve to aggravate his condition.

At this stage of the treatment do not fly to the giving of routine remedies like ergot, gallic acid, hamamelis, or geranium, but make inquiry as to the possible cause of the hæmorrhage, provided, of course, it does not come from a cavity. Find out first of all whether syphilis, rheumatism, or malaria plays any part in the personal history of the patient. This is very essential, since it often gives you a correct clew to the treatment of the affection.

Syphilis.—If there is any evidence of syphilitic infection, place him at once on a thirty-second of a grain of the corrosive chloride of mercury, or a quarter of a grain of the green iodide of mercury, or five grains of potassium iodide, four times a day. In doing this you neutralize and antagonize the dyscrasia which may lie at the foundation of the bleeding, and this goes a great way toward abating the latter difficulty. These agents may be given in connection with any other appropriate remedy at the same time.

Rheumatism.—Dr. Haig, in his work on uric acid, speaks of the important relationship which exists between uric acid and many cases of hæmoptysis, and advocates the administration of the salicylates under such circumstances. At first sight this connection may seem rather vague, but the good effects which follow such a line of treatment make it altogether obvious. There is no doubt in my mind that uric acid sustains some causative relation to pulmonary blood spitting, for I have seen many striking examples in which the sodium salicylate exerted greater hæmostatic properties than anything else which was administered. The following is a typical example of this influence:

D., aged eighteen years, single, six feet two inches tall with a marked heredity of pulmonary consumption and asthma on both sides, although his father and mother are alive and well, began to expectorate blood a month before he came under my observation. Just previous to my first visit he had profuse hæmoptysis, and when I saw him he was in bed and still spitting blood. He was plethoric and apparently in good health otherwise, but complained of a fullness and constriction in his chest, and was unable to take a full breath. He also stated that his hands and forearms were numb and felt as if they were asleep. I gave him morphine, ergot, hamamelis, and geranium, as well as quinine. On the two following days he had several large hæmorrhages, and the oppression in the chest and numbness in hands and forearms remained. On the evening of the third day he began to develop a slight but distinct pain in the finger joints, wrists, elbow, and shoulder joints, and the numbness in his forearms was probably a

* A lecture delivered in the Philadelphia Polyclinic.

little more marked. I placed him at once on the use of the following combination, and discontinued the ergot and hamamelis mixture:

℞ Sodii salicylatis..... ℥ ijss.;
Potassii acetatis..... ℥ j;
Tinct. digitalis..... f℥ iij;
Aquæ menth. pip..... f℥ j:
Tinct. cinch. comp.....q. s. f℥ iv.

M. Sig.: A teaspoonful and a half every four hours in water.

The bleeding ceased, and he improved from this time. The oppression in his chest and the numbness in his hands and arms disappeared promptly.

This was my first case of hæmoptysis in which I was brought fully to realize that rheumatism might become one of its important complications and serve to point out the proper line of giving relief, and this fortunate realization I ascribe wholly to my familiarity with the work of Dr. Haig. I have seen the same condition since in other cases, and met its therapeutic indications by administering the salicylate of sodium in proper doses. I feel quite certain, however, that I saw the same phenomenon before, but failed to recognize its importance.

In treating hæmoptysis it is necessary, therefore, to look for some active manifestation of the rheumatic diathesis either in the patient or among his immediate relatives. This may be wanting in the patient until the hæmoptysis is firmly established, as was the case in the instance above related; but if there is a strong hereditary tendency to rheumatism, it is probably always advisable to administer some of the salicylates or some other antirrheumatic agent from the very beginning of the bleeding. I recommend the salicylates in this affection because my experience has been limited to the use of these agents, but Dr. Haig also advises the giving of mercury iodide for the same purpose.

Malaria.—Sometimes hæmoptysis is at least aggravated by the malarial poison, and when there is reason to suspect any malarial influence at work, it is always good practice to give quinine in full doses.

Ice-cold Applications.—In some cases without a cavity the hæmoptysis is so copious that no medicinal agent given internally is able to subdue it, and under these circumstances resort must be had to the local application of ice to the chest. This is effected by filling one, two, or three rubber bags with ice (the number of these is governed by the indications), which are wrapped in towels and brought in immediate contact with the skin. By this means you will be able to check the bleeding, and in the meân time you will be given a chance to attack and, if possible, to remove the underlying diathesis, if this is present, and thus be able to check the hæmorrhage permanently. There is a certain amount of unnecessary fear of, and prejudice against, the use of the ice bag in this or in any other disease which prevent its application and foster the idea that it should be held as a last resort. This is a serious mistake. Be guided by the amount of blood and the degree of persistence with which it comes from the lungs; if this is profuse, apply the ice from the very beginning.

Other drugs than those mentioned above which are valuable in the treatment of this affection are ergot, opium, lead acetate, hamamelis, gallic acid, and geranium.

Hæmoptysis from a Cavity.—This is always a grave complication. In most instances of this kind there exists a rupture of an exposed blood-vessel on the surface of the cavity, and the difficulty which is encountered here is the uncertainty as to how large a blood-vessel is involved, or as to the extent of the rupture. If the lesion is vast it is evident that no remedy, whether applied internally or externally, will reach the trouble, and in such cases sudden death may be looked for. Do not, however, give up hope because the blood proceeds from a cavity. Apply the ice, give a hypodermic injection of morphine, and keep your patient very quiet. Very often, after the bleeding ceases, and there is not too much secondary disturbance of the constitution, these cases will make rapid improvement. On the whole, cavity cases are not so desperate and hopeless as they seem. I believe that a cavity case has better prospects than another case in which softening is going on, or one in which there are spots of infiltration dotted over the whole lung surface, and this for the following reason: After a cavity is once formed, and becomes dry or nearly so, this is clear evidence that there is sufficient vital resistance in the remaining lung tissue to check the encroachment of the disease, which is not true while softening is going on or while infiltration is active, especially not if the latter occurs in isolated areas. Softening being once started, there is an uncertainty as to where it will stop, but a cavity once formed is proof that the degenerative process is circumvented and held in abeyance by the vital forces.

Pulmonary Rest.—This brings up the important question whether patients who have a tendency to hæmorrhage, either from a cavity or from any other source in the lungs, should practice pulmonary gymnastics or not. My own conviction is that they should not, although I know that this opinion is not universally indorsed. My experience teaches me, however, that any undue functional activity of the lungs in this condition is at all times hazardous. I have seen blood spitting supervene the inhaling of compressed air or coming on after such patients take a number of deep breaths successively. I remember one patient in whom blood spitting occurred after undergoing auscultatory examination of the chest on two separate occasions. Avoidance of deep breathing for a while stopped this effectually.

High-altitude Treatment.—The ever-recurring question is, Should patients with a disposition to blood spitting be sent to high altitudes? From a theoretical standpoint I think many objections may be raised against such a change, but practically I believe that high altitudes have no detrimental effect on this condition; on the contrary, it seems that nearly all such cases derive benefit from this kind of treatment.

The New York Polyclinic.—Dr. W. W. Van Valzah has been elected professor, and Dr. J. Douglas Nisbet adjunct professor in the department of general medicine. Their lectures will be devoted to diseases of the blood and of the digestive organs.

Original Communications.

SOME CRITICAL AND DESULTORY REMARKS ON RECENT LARYNGOLOGICAL AND RHINOLOGICAL LITERATURE.

By JONATHAN WRIGHT, M. D.

(*Fifth Paper.*)

Dr. Alfred Stieda, in the *Archiv für Laryngologie*, Bd. iii, No. 3, 1895, reports some cases of bony cysts, and incidentally makes a very interesting communication in regard to the histological examination in one of them.

Wagnier, *Revue de laryngologie*, No. 22, 1895, also reports a case, as does Castañeda in the *Archivos Latinos de Rinologia*, September and October, 1895.

Dr. Knight published a valuable paper in the *Transactions of the American Laryngological Association* for 1891, which reviewed the subject pretty carefully, reporting a case with histological examination showing an epithelial lining to the cyst cavity. Before making a few remarks on the subject I can not refrain from alluding to a chapter in Dr. Greville McDonald's book on the *Diseases of the Nose* (1890), On the Pathology of Chronic Inflammation as witnessed in the Muco-periosteum of the Nose; Structure of Mucous Polypi, Caries, and Suppuration. I read it with admiration when it was first published six years ago, but in the flood of literature since then it had been almost forgotten. On reading it again I have been surprised to see how nearly the conclusions I have arrived at through my own studies have been anticipated in McDonald's work. This is especially so in regard to bony changes and œdematous polypi within the nose, but I must confess I have not been able to see any evidence to prove McDonald's theory correct in regard to the formation of these bony nasal cysts.

In order to discuss the subject more intelligently I have had a drawing made by camera lucida of the bony wall of one of these cysts taken from a specimen sent me by Dr. Butts.

It will be seen here that it is in a process of bone formation and of bone absorption by means of the osteoblasts and osteoclasts, which are plainly shown here, as they were in the drawing by Van Gieson in Dr. Knight's paper. The Howship lacunæ, the new connective tissue, and the blood-vessels are seen arranged with the same relation to the bony structure itself as one sees to some extent both in the turbinated bones of infants and in that form of bone disease met with in Woakes's so-called necrosing ethmoiditis, associated in many instances with œdematous inflammation or polypoid degeneration of the mucosa.

The chief interest in these cases lies in their pathogenesis. Hypertrophy of bone is nearly always accompanied by a rarefaction—*i. e.*, small cavities are hollowed out of the newly formed bone tissue by absorption. The middle turbinated bone is especially prone to hypertrophic change, in contradistinction to the inferior turbinated bone, whose mucous membrane is the part of the structure which is enlarged in hypertrophy. Knowing this, it would be natural to suppose that rarefaction following hypertrophy of the middle turbinated bone would account for the cyst cavity. As a matter of fact, however, it will be observed in this drawing, as well as in the one in Dr. Knight's paper, that the bony cavity is lined by a scanty stroma *without* glands or many blood-vessels, and by columnar ciliated epithelium. It becomes evident, therefore, that the interior of this cyst must at some time have been in communication with the external surface. To account for this Dr. McDonald (quoting at second hand from Dr. Knight) "supposes the lesion to have its origin in an osteophytic periostitis, doubtless secondary to a hypertrophic rhinitis involving the soft parts. The margin of the bone begins to curve

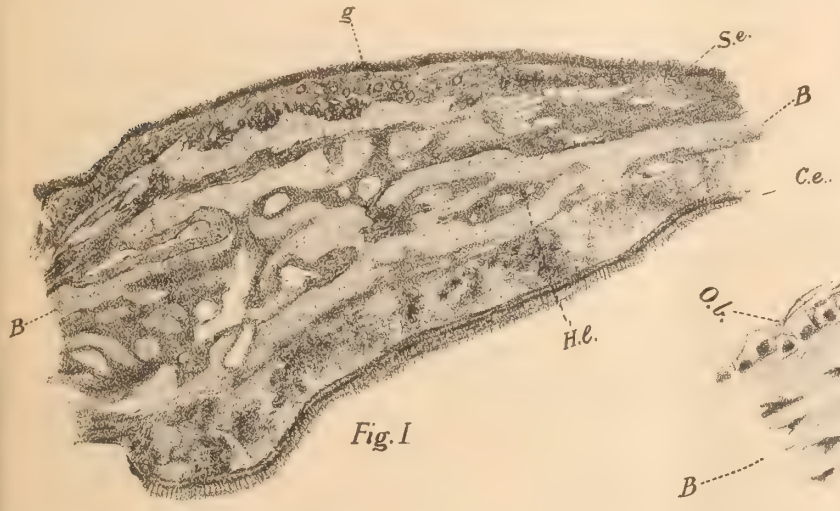


Fig. I

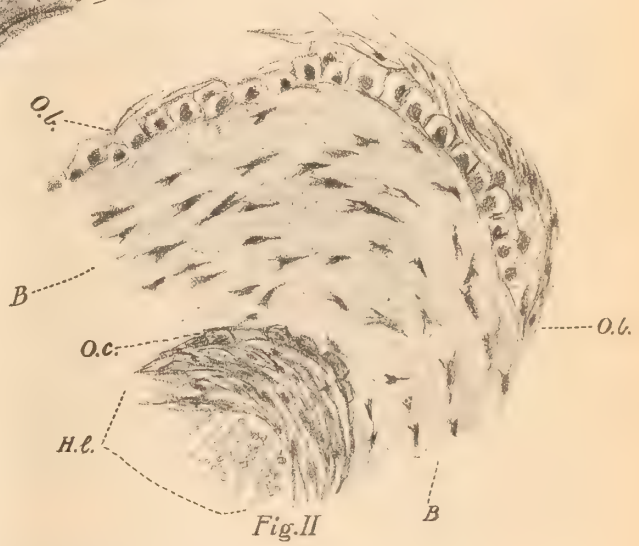


Fig. II

B. Bone.
H. l. Howship's lacunæ with new connective tissue and blood-vessels.
C. e. Ciliated epithelial lining of cyst cavity.
S. e. Surface epithelium.
g. Glands.
O. b. Osteoblasts.
O. c. Osteoclasts.

outward and upward until it meets the body of the bone at some point where at length adhesion takes place."

The objections to this are:

1. It is very difficult to conceive of such a peculiar twist to a hypertrophic bone process.

2. Intermediate states of the bone are not observed, or at least not reported, either clinically or post mortem.

3. Finally and most conclusively, there is no way of accounting for the disappearance of the mucous glands, which are tolerably abundant on the under surface of the middle turbinated bone.

Wagnier suggests again the theory advanced by Zuckerkandl, that these cysts are but the extension of the cavity of the bulla of the ethmoid, or of one of the other ethmoid cells, in the body of the middle turbinated bone.

While this would seem more acceptable, it may be urged that these cavities do not seem to communicate at all with the ethmoid cells. Stieda makes a suggestion which seems to me a valuable one, and which had often occurred to me. We may suppose that these cysts have their starting point in physiological cavities left by the gradual closure of their outlets by processes in embryonic development similar to the cells of the ethmoidal labyrinth, only not so large. The mucous membrane lining these cells has no glands, or but few, and but a scanty stroma.

Supposing the pre-existence of such cavities, we may understand how the osteophytic bone process figured here may enlarge them into cysts recognized clinically by symptoms of obstruction and intranasal pressure.

Stieda's specimen was examined by Professor Lubarsch, who, after describing the external coverings and the internal cylindrical epithelium, says:

"The greatest interest lies in the bony wall, which externally and internally is limited by the dense connective tissue of the periosteum. It shows lamellar structure and is of varying thickness at different points. The rich development of osteoblasts is especially observable; they are often in several layers and are pushed in between the periosteum and the bone substance, and are especially abundant at the outer edge of the bony layer. Corresponding to the bone-forming activities are to be found absorption processes, although in general not so active, in the form of osteoblasts which lie in the Howship lacunæ. In some places they are more abundant and have caused a marked thickening of the bony layer."

In other words, we have a hyperplastic osteitis and a rarefying osteitis coexisting, it being said by pathologists that osteoblasts may be transformed into osteoclasts and these subsequently changed back to osteoblasts. These cuboidal cells, then, which exist along the bordering line of the periosteum and the bone, possess the power of depositing bone salts, and at other times acquire the power of absorbing them. Both of these processes are physiological in the development of bone, but go on in a more irregular fashion during inflammatory changes. In Woakes's book on *Nasal Polypus* the illustration he gives of his necrosing ethmoiditis corresponds exactly with this process, as may be seen by turning to the works of Delafield and Prudden, Ziegler, Birch-Hirschfeld, or Cornil and Ranvier. Woakes was led into this error by confounding the loose, new connective tissue which occurs in the Howship lacunæ with the analogous structure of œdematous nasal polypi and calling both myxomatous.

This histological bone change exists in the nose in connection with chronic inflammation very much more frequently than is commonly supposed. It is nearly always seen in the pieces of bone that come away with nasal polypi. It is found in suppurative ethmoiditis combined with œdematous inflammation of the mucou smembrane. I have lately found it in the bone underlying the chronic hypertrophy of the posterior end of the inferior turbinated bone.

It is a curious fact that these bony cysts have been reported almost exclusively in women. The three or four cases that I have observed myself have all been in females. They occur, too, at an age (twenty to forty) when hypertrophic inflammations of the mucosa are most frequent. There are a great many clinical as well as pathological facts which go to show that the process in the bone is an inflammatory one, having its origin, as McDonald says, in a chronic inflammation of the nasal mucous membrane. This, spreading to the bony walls of these closed cells of embryonic origin, may, as has been shown, cause their growth by hyperplastic and absorptive bone changes, and possibly by the pressure of exudations.

Castañeda says that in many of the cases there is a history of traumatism.

After all is said there are many points about this puzzling subject that still remain obscure, and what I have advanced above, it must be admitted, is more or less conjectural, so far as its ætiological significance goes, although the facts, I believe, have been correctly stated.

Dr. Berens, after hearing some of the remarks above published, was kind enough to show me an ethmoid bone in which the middle turbinated bone was dilated in its anterior portion so as to form a large cavity which communicated freely above, in the dry specimen, with the ethmoid cells proper. Evidently the origin here is either as stated by Zuckerkandl or as modified by Stieda. There were plain evidences of osteophytic action at the lower border of the bone.

Dr. Moure, in his weekly *Revue de laryngologie*, etc., Nos. 6 to 8, February, 1896, writes of the nodular laryngitis of children. This is a condition resulting from muscular strain in choir boys or school children, which in adults we are familiar with under the name of "singers' nodes." Dr. Moure says he has seen more of it in his private practice than at the hospital. I myself have seen more of it in the dispensaries, in newsboys, than elsewhere. Moure says that applications of astringents and the enforcement of vocal rest do not help these patients very much, but the condition passes away at the time of puberty.

In these reviews (second paper, September 22, 1894) I have referred to a paper by Kayser on the same subject. The affection is common enough and surprisingly obstinate, in view of the good results from the treatment of singers' nodes, but there has been very little reference in current literature or in text-books to it.

In the *Archivio italiano di otologia* (anno iv, 1896, 1mo fasc.) there is a paper by Fermi and Brettschneider upon the nature and ætiology of catarrhal rhinitis. They carried out a series of very extensive bacteriological examinations of the nasal mucous membrane. They found a large number of micro-organisms in the mucus of healthy noses. By far the most numerous and constant was the *Sarcina alba*. Various other non-pathogenic forms were found. Of the morbific germs the staphylococcus was found in a certain proportion of normal cases, rising to thirty-five per cent. in cases of coryza. They made sections through the nasal chambers of various animals with the usual precautions of bacteriological technique, planted these sections in nutrient media, and found them sterile, or nearly so. Notwithstanding the abundance of the flora found in the human nose, they were unable to induce coryza with any of the microbes even by rubbing them into the nasal mucosa. The conclusion that they draw from such experimentation I here translate as an example of a lamentable fashion many lab oratory workers have of drawing conclusions in regard to diseases of which apparently they have only the scantiest clinical knowledge. They say:

"Having arrived at this point, and summing up in a word all that we have said of the flora of the nasal mucus and of attempts at transmission of coryza, we are able to state definitely and with certainty [*sic!*] that this affection is not and can not be a specific infective malady."

Measles, scarlet fever, small-pox, mumps, should be the next objects of research by these gentlemen, and when they have failed to find any ætiological germ in those terrors of the nursery the mothers of the world will experience a feeling of great relief to know that they are not infectious or contagious.

The bacteriologists have taught us that pneumonia, typhoid fever, and phthisis are contagious, which we did not know before; but nearly all the diseases that we knew to be contagious in antebacterial days have not yet yielded up their germs.

Seriously, however, notwithstanding our Italian friends, there is considerable clinical evidence to make us suspect at least that coryzæ are infectious under certain conditions. Organic chemistry may reveal the poison to another generation. This work of Fermi and Brettschneider stands in striking contrast to that of Hewlett and Thompson, who found the nasal mucus sterile.

The bacteriology of the nose has been the subject of considerable investigation of late. The work of Hewlett and Thompson, referred to above, has been widely quoted.

Dr. John McKenzie, at the recent discussion of diseases of the accessory sinuses at the meeting of the British Laryngological Association, urged the importance of bacterial examinations of the pus in antrum cases.

Besser, some seven or eight years ago, had reported the presence of the *Staphylococcus pyogenes* in the antrum in normal cases. In the first and second numbers of the third volume of the *Archiv für Laryngologie*, Herzfeld and Herrman report very careful examinations of the pus in suppurative cases. In nine cases were found virulent staphylococci; in nine cases were found, singular to say, an apparently harmless streptococcus; in one case was found a bacillus resembling Friedlander's pneumonia bacillus.

To the *Archiv f. Laryngologie*, Bd. iii, No. 3, Dmochowski contributes one of the best papers on the pathology of the antrum of Highmore ever published. He examined one hundred and fifty-two cases post mortem, or three hundred and four antra, and his report extends over more than a hundred pages. In eighteen cases of empyema he found three times the *Staphylococcus pyogenes*, ten times the *Bacillus pyogenes fœtidus*, three times the *Streptococcus pyogenes*, twice Friedlander's pneumococcus, once the *Bacillus pyogenes*, besides many more pathogenic forms, but is not disposed to lay any great stress on these organisms as ætiological factors. Of the one hundred and fifty-two cases dead of various diseases, the mucous membrane of the antrum was changed pathologically in twenty-eight cases, of which twelve were accompanied by pus in the cavity.

It is impossible, of course, in this place, to attempt any review of this valuable monograph. I only make the following extracts, which I have noted in reading:

"In the antrum of Highmore polypi are confessedly of tolerably rare occurrence. In sixty dissections Luschka found them five times, Zuckerkandl six times in three hundred cases. I have, on the contrary, met with but one polypus in one hundred and fifty-two dissections."

Hydrops of the antrum he also thinks very rare.

One may contrast with this statement, based on post-mortem examinations, the statements of many clinical observers of the frequency of these morbid conditions.

"The result of the acute empyemata can not be exactly settled. It is very doubtful if the pus can disappear and the conditions become normal without operative interference."

Clinical experience would seem, nevertheless, to point to this result in not a few cases, at least so far as the disappearance of symptoms is concerned.

He believes that ozæna has no connection with disease of the antrum. He does not think that many cases have a dental origin, saying that out of his one hundred and fifty-two cases he did not find any evidence of it. Zuckerkandl is quoted as making a similar statement, but on referring to his work I can not find it. My own convictions from clinical experience have been quite contrary to this.

Another valuable account of post-mortem investigations of the accessory nasal cavities is by Eugen Fraenkel in Virchow's *Archiv*, Bd. cxliii, Heft 1, p. 42. He examined one hundred and forty six cases in all. Twenty-eight of his first fifty cases had normal accessory cavities. In all of these twenty-eight normal cases various germs in small numbers were found in the maxillary sinuses. In six of the twenty-eight cases they were found in the frontal and in five cases in the sphenoidal sinuses. Of course, the examination for bacteria after death in these cavities must be open to more or less criticism, but, as we do not have an opportunity to examine such cavities during life in a normal state, it is the best evidence obtainable. Out of the one hundred and forty-six cases Fraenkel found sinus trouble in sixty-three, or more than forty per cent., and yet the clinical history gave no indication of disease of

these cavities save in one case. Of these sixty-three cases of sinus disease there were thirty with antrum disease—seventeen on the right and thirteen on the left. In seven cases he found the sphenoidal sinus alone affected, but in *no* case did he find the frontal sinus alone affected. When one remembers that the frontal sinus has a dependent outlet which opens in the upper end of the gutter of the hiatus semilunaris, whence discharges may flow into the maxillary sinus or even into the ethmoid cells, this should not surprise us.

In regard to the frequency and isolation of sphenoidal sinus trouble this statement of Fraenkel is very interesting. Its proximity to the nasopharynx and its diseases, and its isolation from the other sinuses, except the posterior ethmoidal, may explain this observation. As a matter of fact, there has been a good deal of guessing about the diseases of this cavity. Both maxillary sinuses were affected in seven of the thirty cases, both sphenoidal sinuses but once. The frontal, sphenoid, and maxillary sinus were jointly affected once.

He is of the opinion "that acute fibrous pneumonia has an especial tendency to excite inflammatory disease of the accessory nasal sinuses," the maxillary having been found affected in fifty per cent. of the cases of pneumonia autopsied.

He also states that the maxillary sinus suppuration is more frequently caused by intranasal than by dental disease, and he is, moreover, of the opinion that some of the general diseases are more frequently the cause of trouble in the accessory sinuses than is usually supposed, and more often than contagious disease of the nose or alveoli. He believes that nasal polypi are more often the cause than the result of accessory sinus disease. He never found any dead bone in these sinuses, and he believes that clinical observation in that respect has mistaken bare or easily denuded bone for dead bone.

In looking over his very instructive table at the end of his paper, he seems to have frequently found mucous cysts, but never any polypi, although he occasionally notes œdematous infiltration of the mucosa.

After a perusal of these two valuable papers we must reluctantly come to the conclusion that what we know about accessory nasal sinus disease has hitherto been entirely eclipsed by our ignorance of its pathology.

From time to time, in looking over the literature of the neoplasms of the larynx, I am reminded of a case I published several years ago which interested me then more by its subglottic situation than by its histological structure. Stieda contributes to the *Archiv für Laryngologie*, Bd. iv, Heft 1, the report of a case of laryngeal stenosis by pseudoleucæmic infiltration in an infant who was affected with general lymphomatosis. He finds a few cases reported in literature, all of which, however, had, like his own case, a general lymphatic engorgement. Coyne, Fraenkel, and others have demonstrated the presence of lymph nodes in the normal laryngeal mucous membrane, and there would be nothing surprising were lymphoid hypertrophies occasionally reported as being found in the larynx, as they are so extremely common in the pharynx. As a matter of fact, however, the case reported by me in a paper entitled Subglottic Neoplasms, and published five years ago in the *Journal of the American Medical Association* (September 26, 1891), and one mentioned by Wolfenden and Martin (*Studies in Pathological Anatomy*), are the only ones, to my knowledge, on record in which lymphoid hypertrophies, or adenoids, occurred in the larynx without a general lymphomatosis.

Gerhardt, in his recent monograph (*Kehlkopfgeschwülste und Bewegungs Störungen der Stimbänder*, 1896, Holder) on tumors of the larynx, appears to be unfamiliar with these cases except as accompanying leucæmia.

In my case there were similar lymphoid excrescences along the floor and sæptum of both nasal chambers. This occurred in a young woman on whom a thyreotomy was done for the laryngeal and subglottic growth. The nasal growths were removed by cautery and forceps. There was some tendency to recurrence, but she finally recovered entirely, at least for more than a year, when she was last heard of.

I refer to this case a second time in these reviews in order to repeat my belief that if all the apparently papillomatous masses removed from children's larynges were examined histologically it would be found that some of them were made up of lymphoid rather than of epithelial structure. Whenever we see proliferations in the larynx of an infant we unhesitatingly make the diagnosis of papilloma, meaning thereby a proliferation of the surface epithelium in the form of digitations supported by very little stroma, and usually, doubtless, this is the case, but probably not always.

In this connection I am reminded of another but more frequent misconception. When we see proliferations at the base of the tongue we think of them as lymphoid hypertrophy. Yet in middle-aged women this very frequently is not the case. I have sections from several specimens which show that the hyperplasia is that of the epithelium and that the lymphoid elements are scanty. These growths are sometimes real warts, and not only does the microscope show it, but the feeling imparted to the examining finger is that of a hard, horny surface, and not that of a soft, succulent adenoid.

AN ANALYSIS OF CASES OF LOOSE BODY OF THE KNEE TREATED BY OPERATION BETWEEN 1885 AND 1895.*

By PERCY R. BOLTON, M. D.,
TUTOR IN SURGERY IN THE MEDICAL DEPARTMENT OF NEW YORK UNIVERSITY.

The confidence with which patients are uniformly advised to submit to the removal of floating cartilages from the knee, even where the disability present is but slight, is so general and unquestioned that it seems as though tabulation of the cases recently reported can not be without some value.

Those published during the last decade have been

* Read before the Section in General Surgery of the New York Academy of Medicine, April 12, 1896.

chosen because the cases previous to this period have been rather thoroughly reviewed, and because it may be said that during this time surgical technique has reached a degree of development of distinct value.

It is to be noted with regret that in many of the cases reported important details are lacking; and indeed, in not a few even the result of the operation is omitted.

In many instances the previous history and present condition of the affected joint are so glossed over that any effort to deduce conclusions looking toward a reliable means of framing a prognosis has been impossible.

In describing the operation itself, the position, size, and direction of the incision are often very obscurely indicated; drainage and irrigation are not referred to, or, if mentioned, one is left in doubt as to whether the drain extended deeply into the joint, just through the synovial membrane, or to this structure; in regard to closing the wounds, it is often impossible to say how the operator placed his sutures, or whether he used any at all.

One readily appreciates the impossibility of examining the synovial membrane and other joint tissues in many of the cases operated upon, but at the same time, in other in stances, this would have been possible, and probably was done, and yet their condition rarely has been noted.

Such deficiencies materially reduce the value of cases for statistical purposes and often destroy it entirely; nor should it be forgotten that probably many cases which have been operated upon and which have not done well have never been published.

Were such cases available, it is quite likely that the proportion of disabled joints would be much larger than at present, and that amputations and even deaths would be decidedly in evidence.

Cases reported with so little completeness as to be unavailable have necessarily been discarded. Many cases reported at society meetings, and either not published at all or without special title, and not referred to in the *Index Medicus*, have not been accessible and therefore could not be used.

The total number of cases (seventy-two), consequently, is not so large as might be, but enough are at hand to make a valuable analysis possible.

In structure these cases present a considerable variety, and, as usual, the cartilaginous bodies constitute the largest group:

Cartilage, 20;
Cartilage and bone, 9;
Articular cartilage, 6;
Fibro-cartilage, 5;
Fibrous bodies, 5;
Bone, 2;
Lipoma arborescens, 2;
Lipoma arborescens and tuberculosis, 2;
Tubercle tissue, 1;
Clot in fringe, 2;
Hypertrophied fringe, 1;
Sarcoma, 1;
Not stated, 16.

Of these, 23 were pedunculated and 49 non-pedunculated.

Among these cases, the sarcoma, reported by Weir,* is of more than usual interest, not alone because of its rarity, but because of the fact that the observation is a very complete one.

The tumor was a fibro-sarcoma attached by a slender pedicle to the synovial membrane; it was exposed by an incision inside of the patella and the pedicle tied off.

The patient made an uninterrupted recovery, but before leaving the hospital committed suicide.

The autopsy showed that the tumor had been completely removed and that the remaining joint structures were sound. The perfectly isolated character of the growth is worthy of note, and explains the freedom from recurrence in a previous case of the same kind operated upon by Dr. Weir,† and in which the pedicle was treated in the same way.

In several of the cases reported the body has been stated to possess the structure of articular cartilage, and in some instances more or less bone has been found adherent to the cartilage.

Observers have often been led to doubt or deny‡ that loose bodies ever originate in the separation of portions of the articular cartilage, with or without bone, and have based their opinions upon the absence of a history of severe injury and upon the structure of the body removed.

König# would ascribe the development of the inflammatory process—osteochondritis desiccans—by which parts of the articular cartilage are separated from the underlying bone to relatively slight injuries, though he says the exact cause is yet unknown.

Bodies originating in this way, however, if they are not removed within a comparatively brief period, may undergo marked change in structure.

While at the moment of its separation a body may have consisted of an area of articular cartilage, with more or less epiphyseal bone, after a time, as Poulet and Vaillard‖ have shown, the free surface of the bone may become incrusted with cartilage also, but not with cartilage of the structure peculiar to joints, for, while the latter is smooth and its cells are arranged in a characteristic way, the new cartilage is rough and its cells are embryonal and very irregular in their grouping.

Several of the cases recently published illustrate these points most perfectly, but none better than that of Lane.△

A man, aged twenty-five years, gave no history of any injury of the knee severe enough to impress itself upon him; but during the previous two years he had been aware of the existence of a foreign body in the joint, and suffered from occasional attacks of pain and effusion.

Three months before operation a similar body had appeared in the other knee, also without injury, and had given

* Weir. *Med. News*, Philadelphia, 1887, i, p. 78.
† Weir. *Med. Record*, New York, xxix, p. 725.
‡ Humphry. *Brit. Med. Jour.*, 1888, i, p. 613.
# König. *Lehrbuch der spec. Chir.*, iii, p. 618.
‖ *Arch. de physiol.*, April 1, 1885, No. 3.
△ *Brit. Med. Jour.*, 1893, ii, p. 1207.

rise to the same symptoms. No cause could be ascribed for the development of either body.

On removing the bodies they were found to consist of cartilage. In the right knee—the more recently affected—the inferior surface of the external condyle presented a depressed area whose margins were sharply cut, and corresponded to the loose cartilage removed in size and outline.

The body removed from the left knee was about the same size, but its margins were rounded and smoothed, and the depressed area, also upon the articular surface of the external condyle, from which it came, was found to be lined by a thin layer of presumably new cartilage.

Besides bodies consisting of articular cartilage detached by osteochondritis, probably due to *slight* injury, fragments of bone or cartilage may be chipped off from the ends of the bones entering into the formation of a joint by *severe* injuries, as a case reported by Burghard* shows conclusively.

A man, aged twenty-four years, received a heavy concentrated blow over the internal condyle of the femur, producing ecchymosis and effusion into the knee. There was a point of great tenderness at the site of the injury, and here a loose body was recognized. Incision revealed the body, three quarters of an inch by half an inch composed of articular cartilage, and attached by a tag of periosteum to the margin of the condyle, from whose articular surface it had been chipped off.

Burghard also gives the results of a number of experiments made by himself upon the cadaver, and concludes that an oblique blow, especially upon the internal condyle in flexion of the knee, may readily cause separation of a piece of the articular cartilage.

The greatest number of the cases reported, however, are instances of loose bodies originating in inflammatory changes of the synovial membrane by a process long known in all its details. Concerning the ætiology of fatty and sarcomatous bodies nothing new has been advanced.

Marsh† has reported a case which indicates quite clearly the origin of at least some forms of the loose bodies which occur in tubercular joints. The joint in question, submitted to resection, contained several loose bodies, fatty in appearance and of the size of almonds; besides these, there were others of exactly similar character attached to the profoundly changed synovial membrane. All these bodies consisted of tubercle tissue, and were evidently derived from the synovial membrane.

It is in the results of the treatment of loose bodies of the knee, however, that one finds the greatest progress. In 1860 Larrey‡ collected all the cases operated upon up to that year, and arranged them as follows: Operation by direct incision, 135 cases: success, 98 (74·8 per cent.); deaths, 28 (21·3 per cent); failure, 5 (3·8 per cent.).

In 1883 Barwell collected 48 additional cases, and of these, 44, or 91·6 per cent., were successful, and 4, or 8·4 per cent., died.

Muller* collected 100 cases, with ninety-six per cent. of recoveries and four per cent. of deaths; but one fatal result should certainly not have been ascribed to the operation, for the patient succumbed three months afterward to general tuberculosis.

Among the cases reported between 1885 and 1895 and accessible, there has been no fatal result recorded; indeed, Claudot† states that no death from this operation has been published since 1877.

As to the function of the joint after operation, Jalaguier,‡ tabulating sixty-seven cases, found that in twenty-two per cent. there was some disability; in thirteen per cent. there was more or less limitation of motion, and in four per cent. ankylosis; but in considering this side of the question, one should distinguish between joints seriously damaged by inflammatory processes prior to operation and those practically sound, as in the traumatic cases.

The treatment also of pedunculated bodies, necessarily involving as it does more manipulation of the joint and increased chances of infection, should place this class of cases in a separate group.

Of the seventy-two cases under consideration, sixty two made complete recoveries—*i. e.*, the result is described as "perfect," or "cured," or "having good motion"; in ten (sixteen per cent.), more or less disability is acknowledged, either as the result of the operation itself, or in the failure to relieve conditions present prior to operation, and for the benefit of which the operation was at least in part performed.

Of the ten unfavorable results, six occurred ofter operations for the removal of pedunculated bodies, a percentage of twenty-six, and four after operations for the removal of non-pedunculated bodies, a percentage of eight; therefore the results of operations will be analyzed separately under these headings.

Pedunculated Bodies, 23; Imperfect Results, 6 (26 per cent.).

	Bodies.	Fluid.	Dis. syn. membrane.	Irrigation.	Drainage.	Healing	Result.
1	Lipoma arborescens and tuberculosis.	Yes.	Yes.	Yes.	Yes.	Normal.	Improved.
2	Lipoma arborescens and tuberculosis.	Yes.	Yes	Yes.	Yes.	Normal.	Slight motion.
3	Numerous cartilages.	?	Yes.	Yes.	Yes.	Normal.	Slight motion.
4	Hypertrophied fringe.	Yes.	No.	Yes.	No.	Normal	Fluid persists.
5	Bone and cartilage.	Yes.	No.	No.	No.	Normal.	Fluid persists.
6	Cartilage.	Yes.	No.	Yes.	?	Normal.	Very slight disability.

Of the six unfavorable results after the removal of pedunculated bodies, in two the disease was lipoma arborescens, complicated by recent tuberculosis, and required extensive dissection; in another the synovial membrane was covered by hundreds of cartilaginous bodies, which were removed by the scissors and curette. In these three cases the joints were irrigated and drained, the wound-

* *Brit. Med. Jour.*, 1892, i, 1017.

† *Trans. of the Path. Soc. of London*, 1890–'91, p. 276.

‡ Quoted by Barwell, *Internat. Encycl. of Surg.*, iv, p. 345.

* *Gaz. méd. de Strasbourg*, February 1, 1886, No. 2.

† *Arch. de méd. et de pharm. mil.*, February, 1889, No. 2.

‡ *Arthrotomie. Thèse d'Agrégation*, Paris, 1886.

healing normal, but, as might have been supposed, limitation of motion from the extensive and unavoidable adhesions ensued. In two others a small amount of fluid persisted at the end of several months after operation; one of these cases was really a chronic synovitis, and the body removed an hypertrophied fringe, while the other was a traumatic case of recent date, and the persistence of the fluid was ascribed by the reporter to the damage inflicted by the original injury. Of these two joints, one was irrigated, the other was not, while neither was drained, and both healed without accident.

In another case in which the body removed was cartilaginous, the joint contained some fluid and was irrigated and probably drained; healing was normal, and at the end of one month there existed only "very slight disability."

Of these six unfavorable results, then, none was the consequence of sepsis, three were unavoidable in view of the operative procedures required; three were preceded by disease of the joint, which probably caused the development of the bodies removed, and which persisted after operation, at the time of report.

Non-pedunculated Bodies, 49; Imperfect Results, 4 (8 per cent.).

	Bodies.	Fluid.	Dis. syn. membrane.	Irrigation.	Drainage.	Healing.	Result.
1	Two cartilages.	Yes.	No.	No.	Yes.	Normal.	Slight stiffness.
2	Cartilage.	Yes.	No.	Yes.	Yes.	Normal.	Very slight disability.
3	Cartilage.	Yes.	No.	?	?	Normal.	Some stiffness.
4	Cartilage.	No.	No.	No.	No.	Suppuration.	Amputation.

Of the four imperfect results after operations for the removal of non-pedunculated bodies, in one there was slight stiffness after the removal of two cartilages of considerable size from a joint already the site of chronic synovitis; the joint was drained, but not irrigated, and wound-healing was normal.

Another case ended in recovery with "very slight disability" after the removal of a cartilage an inch in diameter; the joint contained fluid; it was irrigated and drained; the wound healed normally.

Another patient got well with "some stiffness" after removal of a cartilaginous body the size of a double eagle from a joint containing a chronic effusion; no note of irrigation or drainage; healing normal.

The fourth case, however, required amputation through the thigh as the consequence of suppurative arthritis; the body removed was cartilaginous; there was no effusion at the time of operation, and therefore neither drainage nor irrigation was practised; the wound was sutured with silk, the sutures embracing the entire thickness of the margin of the wound.

Of these four patients, three probably recovered the use of the joint almost, if not completely, for they were reported very shortly after operation.

In the fourth case alone can one say that the result might possibly have been avoided.

In view of the results noted in this group of seventy-two cases, there can be no question that in those cases in which the disability engendered by the presence of a loose body in the knee is more than merely trifling, the best mode of treatment is removal, provided the operation can be done under suitable circumstances and with exact technique.

The position of the incision in most cases is determined by the situation of the body to be removed, and wherever placed is generally longitudinal. In the majority of the cases reported the incision was made inside the patella, or less frequently outside; occasionally incisions both inside and outside the patella have been found necessary, or rarely the incision has been of a U or J shape.

The body, if loose, was generally grasped with a forceps and removed, and in some cases was fixed against the subjacent bone during the incision by a tenaculum thrust through the skin.

If the bodies were found to be pedunculated, the pedicles were treated in a variety of ways; small non-vascular pedicles were divided without ligature; small vascular pedicles were tied off; larger pedicles were divided, bleeding points tied, and the raw stump covered by suturing the synovial membrane across it. The record of the use of irrigation and drainage is so incomplete that no very reliable figures can be compiled, but in general one may conclude that irrigation and drainage will be found to be of service in those cases in which the joint is already the site of a chronic synovitis, or in which the joint is subjected to more or less manipulation during operation, or where extensive dissection has caused free hæmorrhage into the joint.

Irrigation and drainage are not required, on the other hand, where a body is removed by a small incision from a joint whose synovial membrane is little if at all diseased.

The wounds were closed in a variety of ways: those of small size were not sutured at all, while the larger wounds were sutured by passing the stitches through the entire thickness of the margin or in layers. But in any case it has been recommended not to place the sutures so close together as to prevent the easy evacuation of the joint should effusion and tension arise.

The dressing has uniformly been designed to protect the wound and to immobilize the knee, and the latter has been accomplished usually either by some form of gutter splint or by a plaster-of-Paris dressing.

A PLEA FOR CONSERVATIVE ORAL SURGERY.

*WITH PRACTICAL ILLUSTRATIONS.**

By G. LENOX CURTIS, M.D.

There is, perhaps, no other department of surgical practice in which the general surgeon, trained in the medical schools alone, is so deficient as in oral surgery. He clings to the ways of the ancients and makes no effort to improve his methods in oral and facial surgery. The fault is not so much his as it is that of the system under which

* Read before the American Medical Association at Atlanta.

he was educated, for, notwithstanding all that has been demonstrated by Professor Garretson and Professor Tomes, the medical colleges persist in declining to annex to their curricula the special line of work regarding the facial region, which would seem to be of paramount importance in view of the æsthetic factor involved.

The medical student of to-day receives no training in oral and facial surgery, so that the general surgeon may be excused for not practising that which he has not been taught. Even our modern text-books contain many of the identical illustrations and much of the advice upon this topic which were published in the forties. The surgeon trained under such auspices must, in order to advance in oral surgery, create, by his own observation and skill, better methods. To such a one the Langenbeck operation—the opening through the face for the resection of the jaw for the removal of tumors and necrosis, trephining below the eye to gain access to the antrum of Highmore, the resection of nerves by cutting through the face—may seem justifiable; but to the man who has seen such operations performed through the oral cavity, so that no visible external scar is left, such practice seems like butchery, and the practitioner who still persists in the old ways is almost guilty of malpractice.

That the condition of oral surgery as practised by the average general surgeon is entirely because of the lack of better teaching in the schools, and that he will accept better methods when their value is demonstrated to him, is evidenced by personal experience. Just prior to the writer's appointment on the staff of the New York Post-graduate Medical School every general surgeon of the faculty who had a vote cast it against him, and he was informed that it was because they did not wish to see this specialty established. It was not long, however, before some of these, recognizing the beneficence of the conservative method, applied for instruction, and were frequently found at his clinic.

The late Professor Garretson met with a similar, though more resisting, opposition twenty-five years ago, in consequence of which he was forced to join with a dental college, when the work that he did, great as it was, fell short of what it would have accomplished had he been connected with a medical school.

Why the faculties of the medical institutions persist in ignoring the advances which have been made in oral surgery, which it would seem have reached a point to demand their incorporation into the medical curriculum, is past comprehension. In view of the facts one might almost question whether it is due to selfishness, self-sufficiency, or politics that this field is so entirely neglected. Certainly, the present course is not in the line of scientific advancement.

It seems now time that America, if she wishes to lead in medicine, as in many other professions, should establish a medical institution devoted to the higher education of students in the department of oral surgery and other neglected subjects, such as nervous diseases, rheumatism, gout, and the treatment of the kidneys, and thus give free and unincumbered scope to the inquiring mind willing to devote itself to this work, and give the world the benefit of the results of its investigations.

To illustrate the need of a better knowledge of oral surgery among general surgeons, allow me to quote the following cases from practice:

On April 19, 1893, Mrs. M., about thirty-five years of age, was brought to me by her dentist, giving the following history: For several years she had had trouble with her teeth, some of them being abscessed, the trouble coming and going from time to time. About February 18th the left side of her face became swollen, and a severe pain was felt in the jaw, the swelling gradually extending to the temporal region. A week afterward the presence of pus was detected. In the meantime her physician applied alternately cold and hot applications, principally poultices, which resulted in the discharge of pus into the mouth. Three weeks later the face was still swollen and hard and the jaws were closed. The temporal abscess was aspirated and the pus drawn off; but, as the difficulty showed no abatement, the patient was brought to the city for treatment. My examination showed the cheek slightly swollen, with considerable swelling in the temporal region. The deep fluctuation showed the formation of pus under the temporal muscle. There was a hardened lump of the size of a peanut near Stenson's duct, and the jaws were almost closed and rigid. The inferior left bicuspid, which had been abscessed and troublesome for many years, had been extracted some two months previously, but the socket had refused to heal; there was also periosteal and subperiosteal inflammation throughout the entire labial and buccal surface of the inferior maxilla on the left side, extending from the central incisor back to and up along the ramus of the jaw. From this inflammatory centre, in my opinion, both the temporal abscess and the one in the cheek had formed, and I demonstrated it to the dentist as the cause.

On June 1st the patient again presented herself at my office with the following additional history, begging me to operate for her: She had been advised to go to a general surgeon whom she was assured was a specialist in oral surgery—in fact, a specialist in every branch of surgery. He had performed six torturing operations in six weeks without satisfactory results, and stated as an excuse for the seventh operation, which he proposed doing, that he had not known and did not know the cause of her trouble, and that he would make an incision from the temporal region to the lower portion of the cheek, a distance of about six inches, opening up the face to the bone to ascertain where the cause lay. This she refused to submit to and left the hospital.

Examination revealed the following conditions: The patient showed a great loss of flesh; was feeble, anæmic, and feverish; tongue badly coated; bowels constipated. She had been obliged to submit to the loss of her hair to facilitate the dressing of the wounds. The jaws were rigidly set, and the patient swallowed even liquid with great difficulty. The face was badly swollen and indurated, pitted on pressure, and bore a strong resemblance to liver.

An abscess, which pointed in the cheek near the angle of the mouth, was almost ready to break through the skin. There was also a deep red spot under the left eye, accompanied by a puffy condition with fluctuation, such as one often observes in antral disease; another of a similar nature, about an inch in circumference, was situated at the external angle of the eye. There was an ugly suppurating, granulating wound immediately anterior to the ear and extending from the middle half to an inch above it, gaping open for an inch, from which pus flowed freely. Protruding from this was a

drainage-tube, which passed down through the wound and opened into the mouth immediately below Stenson's duct.

The zygoma was separated from the malar bone by necrosis; its periosteum was denuded along the entire posterior surface, and the bone also necrosed. While the disease had become greatly aggravated since my first examination, and the patient's health had been much impaired, the most unfortunate complication was facial paralysis confined to this side. This, the patient said, had followed one of the operations at the hospital.

Realizing that there was no time to lose, we concluded to operate at once. Under ether, an opening was made through the mucous membrane into the cheek abscess immediately below Steno's duct, near where the drainage-tube entered the mouth, and several ounces of pus were evacuated.

The granulations and sac were curetted away, leaving only the skin unbroken. The wound was antiseptically packed. An incision was made through the gum and periosteum, extending from the cuspid back to and along the ramus of the jaw. This was found full of pus and granulating tissue, which extended to the top of the coronoid process, beyond which I could readily pass a probe up to and under the aponeurosis of the temporal muscle. Granulations and *débris* were also thoroughly curetted away and the wound packed. A similar condition existed under the temporal muscle, which was treated in the same manner; several ounces of pus and *débris* were removed. The wound which was made at the hospital was treated in like manner. The necrosed bone along the lower border of the zygomatic arch and the malar bone, which had become separated, as above noted, was likewise removed. The necrosis here was quite extensive and extended over the entire tuberosity of the superior maxillary. The inflamed places under and at the angle of the eye were not opened into at this time, as we hoped that as these greater wounds healed the minor troubles would also disappear. The wounds were dressed twice daily for a week, during which time large quantities of pus continued to flow until the indurated condition disappeared. As this diminished, the wounds were dressed daily. The temporal wound was the slowest to heal. Finding the inflammation under and at the angle of the eye showed little sign of abating, although cold compresses were applied constantly, I concluded to open and remove the cause.

On June 6th, by the use of cocaine to relieve pain, I passed a knife through the mucous membrane, just above the left superior second bicuspid, and by means of a grooved director dissected away the tissues until the abscess at the angle of the eye was reached. I then made an incision in the periosteum half an inch in length, through which I was able to curette and remove fully two drachms of pus and several flakes of dead bone. This wound was treated in a similar manner to the others and readily healed. The abscess immediately below and near the internal angle of the eye was treated in a like manner and with like results, the opening through the mucous membrane being made on a line with the lateral incisor. All wounds were healed within two weeks, and the swellings and the induration of the face entirely disappeared. The ugly scar in the temporal region was then dissected out, and the parts were drawn together by sutures and adhesive plasters until healed, leaving only a slight linear scar.

The patient was dismissed and returned to her home June 22d, with all the wounds healed, the complete use of her jaws, and the appearance of her face returned to its normal condition, save the marked paralysis which resulted from the treatment between April 19th and June 1st. Before leaving the city she presented herself at the office of the surgeon who did these first operations, and showed him the results of conservative oral surgery, asking him to note well the facial paralysis which he admitted to her he was the cause of.

Loyal to my fellow-practitioner, I shielded him from his error, and prevented suit being brought for malpractice by her husband against this surgeon, who professed to be a specialist in everything, by stubbornly declaring that I would be a witness for the defendant and swear that, in my judgment, he had treated the case as taught in our colleges and text-books and according to his best ability.

To impress more definitely upon the minds of the readers of this paper perhaps the most potent cause of temporal abscess, I will narrate the history of another and similar case to the one already given.

Mr. L. presented himself with the characteristic swelling in the temporal region and complaining of great pain. Deep fluctuation was readily observed, denoting the presence of pus beneath the temporal muscle. The gums along the alveolar border extending back of the cuspid were highly inflamed and œdematous. The root of the first bicuspid tooth was found almost covered by the gum and abscessed. This had from time to time given him considerable trouble. Attributing to this the cause of the trouble, I removed it, and found that I could pass a probe beneath the periosteum as far back as the wisdom tooth. An incision was made through the gum and periosteum, extending well back along the ramus. This enabled me to pass a large probe beneath the periosteum, up the ramus, and beyond the coronoid process, following the temporal muscle until I had reached the abscess, the pus from which flowed freely down beside the probe and out into the mouth. The bone immediately under the periosteum was covered with granulations and pus. This along with that underlying the temporal muscle was curetted away. The wound in the jaw was packed, while that in the temporal region was douched and sterilized twice daily, and applications of ice were made to the exterior. The stiffness of the jaw at once began to relax, and in a few days it was normal in its action. The treatment covered a period of ten days, when the patient was dismissed cured, and now nearly four years have elapsed without any sign of return.

The origin and progress of this case were identical with those of Mrs. M., already mentioned, and had she had similar treatment at the same stage of her disease the result would have been as happy as in this case, and without any external disfigurement.

A similar but more perplexing condition than that referred to above is one with the following history and results:

Four years prior to May, 1892, the patient, while suffering from a severe pulpitis caused by exposure of the pulp in the inferior left third molar, had the tooth extracted, which was immediately followed by excruciating pain, but of a vastly different character from that which he had previously suffered. He likened the pain unto a severe bruise. The pain continued to increase, and the following day he returned to the dentist and insisted upon his extracting the second molar, although it was not decayed. This the dentist did reluctantly, thinking that perhaps the extraction of the wisdom tooth might have ruptured the nerve, because of the fact that the ends of the roots were bent like a hook. The pain continued for several days, when another dentist was consulted, who continued the process of extracting teeth, but with no relief.

Medical counsel was then sought, but the case baffled all

treatment for several months. The patient's health diminished, and, the pain continuing in the jaw, he sought relief at the hands of the third dentist, who, like a true knight of the forceps, removed the remaining teeth of both left superior and inferior jaws. The shock to the nervous system and the profuse hæmorrhage which followed, owing to the weakened physical condition of the patient, gave him temporary relief. But the old trouble soon returned, and he found himself back under medical treatment, from which he realized no improvement, finally abandoning his business and becoming an invalid.

After the lapse of two years he sought the aid of a general surgeon, who, concluding that the trouble was in the gums and alveolar process in the inferior maxilla, cut and chiseled them entirely away, but to no avail. For two years more suffering and medical treatment continued, until the patient was little short of a wreck and all but insane. He had lost forty-six pounds in weight, was emaciated and anæmic, and he grew despondent and longed for death to relieve him of his agony.

Diagnosis of the seat of the trouble was based upon the early history of the case at the time of the extraction of the wisdom tooth. It was plain that the inferior dental nerve had been lacerated in the locality of the wisdom tooth, and that no relief could be hoped for until the nerve was severed between it and its centre. To make sure of the result, I decided to remove the entire nerve within the jaw. An incision about an inch long was made through the mucous membrane, directly above and back of the location of the wisdom tooth, and the tissues were separated until the nerve was reached as it entered the inferior dental foramen. The nerve was caught up and held with bulldog forceps, and severed at this point.

An incision was then made over the mental foramen, the tissues dissected away, and the dental nerve, where it emerged, was separated. The forceps was then tightly grasped, and with a steady tension the nerve was drawn out of the canal its entire length. The hæmorrhage was readily controlled by means of hot water, but owing to the general flabby condition of the tissues and to the fear of a secondary hæmorrhage the wound was packed and allowed to fill in by granulation. The patient soon recovered from the ether, declaring on his return to consciousness that "for the first time in years he was free from pain." The parts healed rapidly and no untoward symptoms followed the operation, save a little numbness noticeable at times in the left half of the lower lip. The patient soon recovered health, strength, and weight, returning to business in two months, and there has been no return of the trouble.

I will next report a very remarkable case which came to me in April, 1892, as it may materially assist in the treatment of orchitis, being the details of one of several cases coming under my observation:

Mr. B., aged thirty-seven years, with no specific history, was referred to me by Dr. L. Bolton Bangs, of New York city, to whom the patient had been brought for consultation, with the request that I examine his jaw to ascertain whether there was any oral lesion to account for a pain complained of that day. On inquiring into the dental treatment received by Mr. B., I drew from him the following statement: Five years before the gums over the inferior left wisdom tooth, which was retarded in its eruption, became suddenly swollen and very painful. He applied to his dentist, who, in attempting to extract the tooth, broke off the crown, leaving the root, over which the gum healed, completely imbedding it.

Since that time he had realized uncomfortable sensations on that side of the face, with some soreness of the inferior second molar which baffled the skill of those hunting for the cause.

The patient supposed the root to have been extracted at the time the crown was separated from it. Three years following this visit to the dentist he was attacked by excruciating neuralgic pains in the left side of the face, which, until two months before calling on me, unfitted him for business. This pain gradually worked its way down the left side of the body, extending to the groin and left testicle, which became inflamed, swollen, and troublesome. All efforts on the part of his surgeon to relieve his suffering were unavailing.

One of the peculiar features of the treatment in this case is, that when hot or cold applications were made to the testicle the pain ceased in it, but immediately appeared in the left side of the face. As soon as the applications were removed the pain returned to the testicle.

After examining him I concluded it was a case of metastasis, such as is frequently connected with mumps. I sent the patient back to Dr. Bangs with the following note: "I believe I have found the cause of this long and persistent neuralgia, and that if I operate the patient will no longer have need of your services, as the orchitis will disappear with the healing of the wound."

The patient was not long away, for the wide-awake specialist sent him back with a note stating, "You can not operate too quickly to suit me; you have awakened my curiosity. I am interested, and will be pleased to follow the case with you."

Examination revealed a slight necrosis of the alveolar process immediately back of the inferior second molar, the pulp in the distal root of which was dead and abscessed, the pulp in the anterior root being vital and exposed. There was a large cavity in the distal surface of the tooth, below the enamel, concealed by the gum, hence the long-continued soreness of the tooth. I extracted this tooth and removed the slight diseased condition made by the abscess.

The cavity, in my opinion, was caused by secretions forming between the second molar and the wisdom tooth which abutted horizontally against it. There was no satisfactory evidence of the extraction of the root of the wisdom tooth, and the gum over it appeared normal. But to be sure that all possible cause for the pain was removed, I laid open the gum, cut through the periosteum and bone, and suddenly struck upon the root, which had so long been buried. In examining to ascertain its position in the jaw I plunged my probe into the living pulp of the root. You can better imagine the result of this thrust than I can here tell it. The patient's actions reminded me of the antics of a jumping-jack when the string is pulled. Under an anæsthetic I dissected out and removed this root. The wound healed readily, all pain ceased with the operation, and the patient made a complete recovery. There was no swelling of the testicle the day following the operation, and all pain and soreness disappeared within forty-eight hours, and have not since returned, the patient being restored to perfect health.

It gives me great pleasure to mention here the praiseworthy attitude of Dr. Bangs in contradistinction to that of the surgeon who handled the case of Mrs. M.

The next case is one in which the cause is so plainly discernible that it is liable to be overlooked.

An old lady in her sixties had for many years suffered intensely from facial neuralgia. After repeated failures of medical skill the patient was transferred to the general surgeon, who in six years did several operations in the right superior and inferior maxillæ, resecting the nerves, and deforming and disfiguring that side of the face. When I was called to see the patient all the teeth had been extracted from the right side of the mouth, but the pain remained incessant; less, however, at night and when she lay upon her right side, or when her face was swathed in flannel and protected from cold blasts of air.

Her general health in consequence of her long-continued suffering was greatly enfeebled. Examination of the mouth was unsatisfactory, so I looked further for the cause, which I apparently found in two large "seed" moles, one of which was situated immediately in front of the ear, and the other three inches below on the affected side of the face. A few drops of cocaine were injected beneath the tissues at the base of these moles, and the skin dissected sufficiently for a small ligature to be thrown about them and firmly tied. The moles were snipped off with scissors and the stumps cauterized with nitrate of silver. The ligatures came away with the sloughs which formed, and the wounds healed without further treatment.

An examination of the moles revealed an exposure of the nerves, which were also intensely inflamed.

Several months subsequently I received a letter from the patient's son, stating: "Since the simple operation which you did for my mother she has not experienced the slightest pain, and daily blesses you."

Similar cases are common where patients have traveled nearly the world over, consulting physicians in search of relief at an enormous expenditure of time and money.

The operations described are not new to those familiar with the progress of oral surgery as worked out by the more advanced members of the dental profession, but the fact remains that the general information given to the medical student is insufficient for the proper handling of these cases.

I speak within bounds when I say that maltreatment at the hands of men ignorant of the higher development of this branch of surgery has given me the greater number of my patients.

There is no question that the more cultivated dentists know the surgery of the mouth better than the surgeon who has been only generally trained; know better also the relations of disorders of the oral cavity with contiguous and distant tracts, and are better prepared to diagnosticate the cause of many obscure lesions connected with those relations.

I would therefore recommend to the surgical profession, particularly to those who have had no special opportunities for studying the diseases of the mouth, the calling in of a skillful dentist, preferably one who has been medically educated, at least for the benefit of his judgment in diagnosis, whenever there is room to suspect oral complications.

Our medical schools will not do their entire duty by their students until they add to their list of teachers dentists of the ability to instruct their students in diseases following affections of the teeth; and our text-books will be incomplete until they give proper attention to oral surgery as viewed from a conservative standpoint.

LITHÆMIA.

By FRANK PARSONS NORBURY, M. D.,
JACKSONVILLE, ILL.,
MEMBER OF THE ILLINOIS STATE MEDICAL SOCIETY,
THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION,
THE ST. LOUIS MEDICAL SOCIETY;
HONORARY MEMBER OF THE COLORADO STATE MEDICAL SOCIETY;
MANAGING EDITOR OF THE MEDICAL FORTNIGHTLY OF ST. LOUIS.

Among the most interesting subjects to which modern pathology has given prominence is the study of faulty metabolism as manifested in the so-called lithic- or uric-acid diathesis; and since Haig propounded his theory of uric-acid formation, in 1888, there has been quite a renewed interest and considerable controversy as to the physiological chemistry concerned in the production of urea and uric acid and the study of the clinical manifestations of this diathesis. My object in presenting this paper is to call attention to the clinical features of the subject, as grouped by Murchison, and named by him lithæmia.

More especially I would speak of the diagnosis and treatment, merely mentioning the essentials of physiological chemistry, inasmuch as it is still in its formative stage, as new theories have been advanced since the study of nucleins has been taken up by Levison, Horaczewski, Vaughn, and others, who have assured us that the disruption or disintegration of nucleated bodies has much to do with uric-acid formation, and that abnormal leucocytosis augments its generation.

As Haig's theory has received such universal recognition it would be well just here to briefly refer to it. He claims to have substantiated his theory by a large series of experiments. It is "that the formation of uric acid has a normal relation to that of urea (32·6 to 1); that this relation is constant in health, in disease, under all diets, and under all medications; that is, that a diet, a medicine, or a mode of life, or a morbid process which increases or decreases the production of one of these principles, alike increases or decreases one or the other; but that certain dietetic substances, medicines, habits, disease, or diathetic conditions have the power of checking not the formation but the excretion of uric acid, and thereby causing the storage of uric acid in the system, which uric acid in turn becomes a source of irritation and disease; and, further, that this uric acid, when heaped up in the liver, spleen, or other organ or tissue, causes a local disease, but when swept out into the alkaline blood produces a general lithæmic condition." Murchison, in 1877, in a series of clinical lectures on the functional diseases of the liver, maintained that the clinical groupings of symptoms, termed by him lithæmia, were dependent upon defective conversion of nitrogenous matters into urea, and producing lithic or uric acid. The accumulation of uric acid in the system is the foundation of the uric-acid diathesis. We know that uric acid does not exist, in the free state, in urine, but is combined with alkaline bases. When these bases are deficient, or when the uric acid is in excess, precipitation occurs, and the well-known red particles are visible. Under the microscope these appear colored—brown or orange tinged prisms. Uric acid is sparingly soluble in water, in the proportion of one to twelve thousand parts of water; consequently a very

slight excess of uric acid or diminution of water causes its precipitation. It is insoluble in dilute acids, but readily dissolves in alkalies and carbonates. When combined with potash, ammonia, and soda it forms a brick-dust sediment known as the mixed urates, which are amorphous, soluble by heat, and form frequently an opaque film over the surface of the urine, and such is their affinity for the urinary pigments that they generally leave a pinkish or reddish stain in the vessel. I have frequently, in obtaining the history of a case, had patients tell me they could not wash this stain off. Now, the deposits of uric acid are not infrequent in persons in good physical health, especially after an excess or an error in diet.

"Sir William Roberts says: You may find them a few hours after breakfast—that this is the most common time—and he designates this 'alkaline tide.' Especially is this true with persons of gouty habit and those predisposed to hepatic derangements." (Osler.)

These occasional deposits may occur without the least disturbance of health. Murchison said they may exist for years in some individuals without much apparent discomfort.

However, this can not go on without sooner or later causing trouble, for Haig has shown us that uric acid is in excess in the blood, not because the excess can not be eliminated by the kidneys, for in fact the depurative function of the kidneys is not necessarily disturbed by lithæmia, but because continued retention and storage of uric acid are beyond what is compatible with healthy function. It is the accumulation of uric acid, then, that causes disease. How this action occurs is not well understood; in fact, as Osler says, "there is too much theorizing, as many authors attribute this as the cause of a considerable number of complaints. One author alone mentions thirty-nine different complaints to which he attributes uric acid as the cause."

The essential factor which we must keep in mind, whether the manifestations are direct, openly expressed, or latent, is faulty metabolism. The symptoms, if carefully studied, all point to this as the one great cause. The principal or leading symptoms are epigastric oppression (load in the stomach), flatulent distention of the bowels and stomach, heartburn, acid eructations, bad taste, furred tongue, inactive bowels, constipation, variable appetite, excessive secretion of viscid mucus in the fauces and back of the nose, intermittent or tense pulse, mental depression, irritability (of an explosive character), various nervous disturbances, such as neuralgic pains, vertigo, headache, insomnia, restlessness, or perhaps drowsiness. The urinary symptoms are frequent micturition, due to irritability of the bladder, and pain in the urethra, especially at the meatus. The urine is of high specific gravity (1·025 to 1·035); on cooling, the urates with which uric acid is combined are deposited. As a consequence, the urine, which was clear when deposited, becomes cloudy or muddy when cooled, and the deposit of the "brick dust," or, as one of my patients expressed it, "red sand," is noticed. The crystalline character of the deposit can generally be recognized by the naked eye. Under the microscope these crystals appear lozenge-shaped, but they may take on almost any shape. These crystals are, as before said, brownish or reddish-brown or orange.

The chemical test for uric acid (the nitric acid and ammonia test) may be made, or, if necessary, a quantitative estimation may be of service. The symptoms must be studied collectively, due consideration being given to each symptom as well as to the clinical picture as a whole. It is not infrequent that the urinary analysis alone would determine the diagnosis, and just here let me say that if more attention were given to urinary analysis—by that I do not mean simple tests for albumin, etc., but a quantitative and qualitative analysis—there would be a less number of cases of neurasthenia and more cases of lithæmia receiving treatment from physicians.

Now, neurasthenia is oftentimes accompanied by uric-acid manifestations; so, in the study of the two affections, neurasthenia and lithæmia, we must learn to differentiate, and this can only be done by painstaking investigation of the clinical aspects of the case. In my experience I have encountered patients said to have nervous exhaustion (neurasthenia) who had received tonics, sedatives, etc., without number, but without any apparent success. A careful clinical examination by me showed that the nervous and mental manifestations were but the symptoms of lithæmia. A differentiation must be made, or else our results will be decidedly a burden to ourselves and our patients.

I will mention a few other symptoms which will aid us in diagnosis. Gastro-enteritis, hæmorrhoids, and catarrhal troubles of the mucous membrane should lead us to make an analysis of the urine. Also iritis, of which Risley tells us that next to syphilis lithæmia is the most frequent cause. He says it may also cause conjunctivitis, photophobia, and errors of refraction. Again, lithæmia predisposes to local inflammation, as seen in such diseases of the skin as eczema, urticaria, psoriasis, etc., also in joint affections.

Murchison made the practical observation that at such a time uric acid ceases to be eliminated during the course of the disease, but reappears on its subsidence.

Lithæmia may produce well-defined nervous diseases, especially affections of the peripheral nerves. Gray says: "Neuralgia and sciatica, neuralgia of the nerves of the arm, forearm, tongue, breast, and intercostal neuralgia, gastralgia, and enteralgia." Neuritis does not occur, and Gray makes this a point of distinction in the diagnosis of the disease. Paræsthesia is frequent, consisting of numbness, formication, "fuzziness of the skin," and tenderness of the scalp. The muscles may cramp, especially the gastrocnemii, twitchings of the muscles may occur, and sometimes quite profound vasomotor disturbances may be noticed.

In brief, the foregoing are the principal symptoms of lithæmia which are more or less prominent in every case, as lithæmia has this one peculiarity, that if you have thoroughly studied several cases, making allowances, as Rockwell says, "for constitutional differences and occasional aggravated forms," you have seen about all there is to see in lithæmia. That it is confused with other diseases, that it is often not diagnosticated at all, and that it receives but very little attention, is apparent to all who are

interested in internal medicine. In this day of nervous exhaustion, when every confused, apparently heterogeneous or vague group of symptoms is ascribed to neurasthenia, when overworked mothers, aggravated fathers, and school-burdened children are said to be struggling with nervousness, I have been much interested in noting how frequently indeed is the lithæmic state the real basis of the trouble. Not that we do not have plenty of nervousness, and that is a recognized entity, but that we also have a sufficiency of lithæmia. Let us hastily look at some of the points of differentiation between these two apparently similar but really opposed manifestations of the disease.

Beard formulated the varied symptoms of neurasthenia; he it was who created the name, and his observation excited considerable comment throughout the medical world. To day neurasthenia is universally recognized. The characteristic mental symptoms of the disease are depression and very often irritability, both of a passive kind. As Rockwell says, "The condition is due to nerve force being more or less exhausted, and the patient would hide his misery before he would cause unhappiness to those dependent upon him."

The characteristic mental symptoms of the lithæmic are, first, a moody condition, lasting for days at a time; a touchy, explosive irritability, and which, if continuous, causes him not a little humiliation. The nervous manifestations of neurasthenia are so very varied, while in lithæmia they follow usually the same old routine. No one example of neurasthenia will give you a clew to them all, which is generally the case in lithæmia.

Again, treatment will enable us to differentiate between the diseases; the general plan adopted in neurasthenia is almost opposite to that of lithæmia, while, perhaps, incidental symptoms may be treated much the same. To best illustrate the two marked phases of lithæmia—two general classes, if you please—I will quote two cases from my case book, showing the marked features of each. Both of these are in women, which suggests this thought that, as my experience has been largely with this sex, and as they are peculiarly liable to nervousness, it is very possible that lithæmia has not received proper attention as the probable source of much functional nervous disturbance.

Case I (illustrating the gastric and hepatic derangements of lithæmia).—Mrs. M., aged forty-two years; married—a well-nourished woman, inclined to stoutness, a good feeder, rather sedentary in her habits—complained of mental gloom, irritability, etc. (irritation of an explosive character). She had no children, few household cares, an indulgent husband, and nothing to worry her. Her condition was better at times; then the load was more bearable. She felt humiliated by her irritability and her unkindness, especially toward her husband. She had undergone the usual Paine's celery compound treatment and had consulted physicians; she had taken tonics and sedatives without limit, but all to no purpose. On examination, I found she was having intestinal indigestion, flatulence, frequent urination, with pain in passing it—a burning or "heat," as she called it.

She also said that intercourse had been painful to her for months, and as a consequence such relations had entirely ceased. Other symptoms were pain in the hands, forearm, arms, in the thighs, and headache; rather a constriction about the head, as if a band had been forged about it; disturbance in the ears, also of vision, and a general feeling of malaise. These symptoms, together with her mental condition, had occasioned much unhappiness in their previously happy home. To all appearances she was well, and yet she was in a sad plight. A urinary examination made later revealed the quantity below normal; urates in excess, which indicated to me the probable source of bladder irritation; frequent micturition, and distress at such times. A mercurial followed by a saline laxative, and then copious draughts of water, relieved the constipation; and then the free use of salicylates, so highly recommended by Haig, assisted in the excretion of the uric acid. Water was prescribed in abundance and the diet was closely regulated, resulting in marked improvement in her condition. For over a year she was well, but through errors in diet she not long ago had a return of the symptoms in a mild form, the greatest difficulty being with the bladder irritation. I then prescribed maizo-lithium, of which I will speak later, with very happy results.

Case II (illustrating the aggravated nervous symptoms which, if an analysis of urine had not been made, would most assuredly have been diagnosticated as neurasthenia).—Mrs. M., widow, aged forty-seven years, had been gradually losing weight for some time; she was slender, active, and had always been energetic. When I first saw her in consultation she was suffering with convulsive clonus of the diaphragm and abdominal muscles, with considerable intercostal pains. The history showed that the first symptoms manifested were disturbances of digestion and furred tongue, and bad taste in the mouth; then pain and flatulent distention of the bowels; later constipation, followed by increased frequency of urination, burning, etc. The urine, on cooling, deposited red sand, as she called it, and became cloudy. About this time the nervous phenomena appeared; intercostal pain down to the thighs, insomnia, a little despondency, and a great deal of irritation and worry, and one night the intercostal pains gave way to the spasm of the diaphragm, which was in existence when I first saw her. These spasms were occurring about one in every thirty-five seconds, sometimes oftener, and with every spasm some intercostal pain. The pulse was tense, with a tendency to tachycardia, and the second sound of the heart was increased. Headache on top of the head, also that constriction about the head; her limbs were cold; her eyesight was poor and temporarily impaired. She had catarrhal disturbance of the fauces and post-nasal region; a feeling of fullness in the ears; some paræsthesia, especially of the lower limbs, back, and in the occipital region of the scalp. There was no neuritis. The urinary analysis confirmed my idea that the symptoms indicated a uric-acid storm. I recommended the continued use of water freely, having the patient drink a full glass of water before meals and also between meals; and to assist in the elimination of the uric acid, to quiet the bladder, and overcome the irritation of the urethra, I prescribed maizo-lithium (Attfield Chemical Company). I must say that I was highly gratified with the results. The irritability of the bladder was overcome by the sedative action of this drug, the general urinary symptoms were greatly benefited, and, with the increased elimination of uric acid, which was augmented by the maizo-lithium, the nervous symptoms steadily improved. The clonus of the diaphragm and intercostal pains soon lost their terror. An acid tonic (dilute nitrohydrochloric acid and nux vomica) was prescribed; this, with the maizo-lithium, has made the patient very comfortable. It is now three months since the acute attack, and metabolism now is apparently normal.

It would be well to enter more into the details of the therapeutics of lithæmia, inasmuch as the general principles should be well understood. In treatment we should be governed by the demands which a special study of our patient would reveal. Each case is a law unto itself and should be carefully studied. Diet should be regulated. Haig, Yeo, Broadbent, Lange, and others have contributed most useful information on this subject. Haig places regulation of the diet as of the first importance. The diminution of meat food and the substitution of milk, fish, and eggs constitutes the animal dietary which he recommends. I have followed his suggestions, especially in the marked nervous cases. We know that nitrogenized animal diet has a tendency to increase the acidity of the fluids of the body and also that vegetables increase the alkalinity; now, to avoid complications from either source, we study to obtain the happy medium. Meat must be reduced to a minimum, and to satisfy the demands for a meat diet some authorities recommend a moderate quantity of fat, as it quickly satisfies the appetite and lessens the desire for food. Broadbent recommends the milk diet, especially in cases with depression or melancholic symptoms, where there is a high tension of the pulse. Yeo and all writers, in fact, insist upon the strict prohibition of the use of alcoholic liquors of any kind. They all tend to increase the uric acid formation and ofttimes their secret use may be detected by the appearance of uric-acid symptoms in cases where they had been prohibited.

Now, as to the regulation of the habits of life. Exercise, we know, increases the elimination of urea and uric acid; also hot baths and massage. To this end direct exercise to be taken in moderation, especially walking and the use of a bicycle, and the daily hot bath until it is no longer needed. Among other general directions to be observed, we should particularly insist upon the free use of water. In a recent case I obtained an interesting point in this connection. When I asked if the patient used water freely, she replied, "Doctor, I can't remember when I took a drink of water." I asked what she used instead, and she said "tea, coffee, and sometimes beer." She never drank between meals. Remember we must that uric acid is feebly soluble in water, and hence the fluids taken into the body must be ample to keep in suspension the urates with their uric acid, as it is their deposition in the bladder which causes irritability and pain; again, we need to flush the body freely to carry off the accumulated uric acid. Mineral waters have enjoyed a wholesome reputation in the treatment of lithæmia, and I have used the lithia waters freely, but since beginning the use of maizo-lithium I have been so pleased with its value that where indicated I prescribe it. It is a definite compound of *Zea Mays*, the active principle of which is maizenic acid, with lithium. The well-known corn silk has a physiological action which is especially serviceable—viz., it augments the excretion of uric acid and has a sedative action upon the urinary passages.

Lithium promotes the assimilation and metabolism of nitrogenous material and increases the elimination of urea (Shoemaker). When combined with vegetable acids its efficiency is promoted; these salts are decomposed in the system; the lithium combines with the uric acid and promotes its excretion.

Shoemaker says: "In the uric-acid diathesis the several salts of lithium are used with great advantage, even where chalky deposits exist." Garrod, Ditterick, and Wood also indorse its action, while Haig believes it is contraindicated. My experience with the maizo-lithium has been very pleasing in both forms of lithæmia. Another eliminative of value in lithæmia is salicylate of sodium, which drug Haig has so highly extolled. He says the symptoms of lithæmia vary with the proportion of uric acid in the system, and the uric acid can be removed by the salicylates.

Alkalies dissolve uric acid; acids store them; an alkali washes uric acid out in the blood; salicylic acid removes it. What is known as Haig's dictum may well be remembered: "Give acids first, then give the salicylates."

Strychnine should be given in full dose throughout the course of the disease.

As adjuvants in treatment fruits can be used, also coffee and tea, and with men an occasional cigar.

SEVEN INTERESTING EYE CASES.

By J. H. McCASSY, M.A., M.D.,
DAYTON, OHIO.

Case I.—In March, 1888, M., aged eighteen years, while returning home from church in a rural district on Sunday evening, had marital relations with a girl affected with gonorrhœa. He conveyed the poison to his eyes by means of his fingers, and also infected some towels, which conveyed the infection to the eyes of his mother and his brother. Ignorant of the nature of this dire malady, and believing it to be "pink eye," medical aid was not sought for many days. This virulent poison, with its characteristic fury, irreparably damaged the eyes of the mother and her two sons before a physician was called. These unfortunate sufferers resided in the country, ten miles from the city, and were conveyed thither in a lumber wagon protected from the inclement weather by means of comforts around their heads. A separate building was procured for them, and they were placed under the care of the county physician, with whom the writer saw the cases. Argentic nitrate, ten to eighty grains to the ounce, was brushed on the conjunctiva daily, and immediately washed off with water or with a solution of common salt. A sublimate solution, 1 to 5,000, was freely instilled hourly. At the end of a few weeks' treatment the solution of sublimate was dispensed with, and a saturated boric-acid solution (fifteen grains to the ounce) used instead three or four times daily. The writer saw the cases occasionally in consultation with the county physician for six months. The cases being criminally neglected at first, the treatment coming too late, vision was almost totally destroyed in all three cases.

Case II.—M., aged twenty-four years, a blind music teacher and piano tuner, gave a history of ophthalmia neonatorum in infancy. In the pursuit of his calling he was forced to make long journeys through the country in a buggy. He suffered at times severe pain of a neuralgic character in his right eye. From the history of early blindness due to ophthalmia neonatorum, accompanied by hardness of the eyeball and the intermittent pain of a neuralgic character, the writer made a diagnosis of calcareous degeneration of the chorioid. Enu-

cleation was advised and made. The diagnosis was confirmed. After enucleation, a mass of granulation tissue the size of a bean formed on the cut end of the optic nerve. This was snipped off six months after the operation, and did not return.

Case III.—J. E., aged thirty years, a chicken dealer, while splitting kindling wood was struck in the right eye by a splinter, which lacerated the cornea and anterior capsule of the lens. A traumatic cataract formed in a few hours. Cold applications were applied for two or three days, then they were displaced by warm ones. A two-grain-to-the-ounce solution of atropine was instilled twice daily. A saturated solution of boric acid was used freely four or five times daily. Inflammation abated in three or four weeks. Then the patient consulted the writer, who discovered a large eyelash floating in the anterior chamber of the injured eye. A four-per-cent. solution of cocaine was instilled, and the von Gräfe operation for cataract extraction performed, the eyelash seized and removed with a toothed forceps. The traumatic cataract was then extracted in the ordinary way. Recovery, with vision of $\frac{2}{5}\frac{0}{0}$.

Case IV.—In 1889, P., aged forty-five years, while feeding cattle, was struck in the left eye with some straw. Conjunctivitis and ulcerative keratitis followed. He was treated by his family physician for about two months without improvement. Then the writer was consulted. The eye was cocainized and curetted with a spud and a piece of straw removed. Recovery soon followed. The foreign body remained imbedded in the cornea for two months and kept up violent inflammation.

Case V.—A girl, aged ten years, while playing with a rusty potato knife, cut through the cornea and the anterior capsule of the lens of her left eye. Cold applications were used for a few days; then these were displaced by warm ones. A few drops of atropine (two grains to the ounce) were instilled twice daily, and a solution of boric acid was used several times daily. A hypopyon formed, filling the whole anterior chamber. A paracentesis at the sclero-corneal margin was performed, the lens immediately dislocated forward; the opening was enlarged and the opaque lens extracted.

Iridocyclitis followed, but this subsided in six to eight weeks. The eye was preserved, presented a fair appearance, and retained about one fifth normal vision. The rust of the knife was a prominent causal factor in the production of the complication of iridocyclitis.

Case VI.—D., aged fifty-eight years, an old soldier, suffered with a severe corneal ulcer, which had its origin in the breaking down of an old corneal scar. This ulcerative keratitis involved nearly the entire cornea, except a small portion at the upper and outer margin. A complication of iridocyclitis was present. A hypopyon completely filled the anterior chamber. The case was in progress ten or twelve days before the writer was consulted. The patient was now put on treatment consisting of leeching, hot applications, cathartics, and diaphoretics. The ulcer was curetted, and a few drops of a solution of atropine (two grains to the ounce) were instilled twice daily. Saturated boric-acid solution was used. It was necessary to administer morphine to allay pain and procure sleep at night. A paracentesis was made, which was followed by temporary relief and benefit. The chamber rapidly refilled, and five days later a paracentesis with an iridectomy was made opposite the only clear portion of the cornea remaining. The case progressed favorably for about six weeks. The ulcerative process in the cornea subsided, and the conjunctival injection almost disappeared. But the end was not yet. Suddenly inflammation lighted up with redoubled violence. Early one morning the patient came to the office, having suffered great agony all night. The lens had been luxated into the anterior chamber, causing great bulging of the membrane of Descemet from the bottom of the ulcer. The lens was extracted from below in the ordinary way. Recovery soon followed without a staphyloma. Vision, $\frac{2}{7}\frac{0}{0}$.

Case VII.—M., aged sixty-four years, having a good family history, had been afflicted with ectropion and symblepharon in his left eye for twenty years. About a month before consulting the writer he, while cutting a broken pane of glass out of an old window sash, sustained an injury in the upper margin of the cornea of the left eye. When the writer first saw the case, which was in May, 1896, there was extensive conjunctivitis, ulceration, keratitis, and plastic iritis. The fundus of the left eye was normal, with the exception of slight hyperæmia of the disc and retina.

Treatment.—The bowels were kept loose by means of small doses of calomel and Epsom salts. A few drops of atropine solution (two grains to the ounce) were instilled twice daily. A solution of boric acid, fifteen grains, and sulphate of zinc, one grain to the ounce, was instilled freely four to five times daily. Hot applications were used for eight to twelve days. The edge of the ulcer along the upper margin of the pupil was touched with the actual cautery, which stopped the spread of the ulcer to the centre of the cornea. The ulcer then showed a tendency to spread around the margin of the cornea like a ring ulcer, but another application of the cautery checked further spreading. The artificial leech was used three or four times during the first week, one to three ounces of blood being withdrawn at each sitting. Iodoform was dusted on the ulcer twice daily. During the first week the pain from the iritis was so intense that it was necessary to administer a dose of morphine nightly to relieve pain and procure sleep. At the end of two weeks the conjunctivitis and pain had almost wholly disappeared. The ulcer was healing kindly. There was complete recovery in three weeks, except from the iritis, which was slightly sluggish in its action.

32 West Fifth Street.

FOODS FOR THE SICK.

By WALTER SANDS MILLS, M. D.,
STAMFORD, CONN.,

In view of the importance of diet in the treatment of the sick, too much attention can not be devoted to this subject. In any severe acute illness the digestive organs are more or less impaired, and experience teaches us that under such circumstances adherence to some form of liquid diet is the most satisfactory. Milk is, as a rule, the most acceptable food; occasionally, however, we find a patient who will not or can not take milk, and then we are obliged to resort to some other nutrient. During convalescence it is desirable to add something to the milk and sometimes to substitute something for it. Again, persons who from overwork, worry, or other causes are run down need "toning up," and diet is our best help in that.

It is only of late years, however, that particular attention has been given to this important adjunct in the treatment of the sick. During that time much has been done. The theory and practice of dietetics is not yet definitely fixed, so that as physicians we are obliged to be governed largely by clinical experience in prescribing food

for our patients. As a clinician, therefore, I wish to place on record a few data concerning foods—conclusions reached as a result of my own observations.

An invalid's food should be concentrated, easily assimilable, and nourishing. It ought also to be palatable. This last requisite is by no means an unimportant one, as a food that would otherwise be of service may have to be abandoned altogether on account of its repugnance to the patient. There is a multitude of food preparations on the market of varying degrees of usefulness. I have watched the effects of many of them; some have proved valuable, some have not.

After an extended trial with cod-liver oil and its manifold combinations and substitutes, I must declare my almost invariable disappointment in the results obtained. To my mind, they have seemed to frequently do harm through their disagreeable and indigestible properties.

I wish also to enter a protest against the numerous alcoholic preparations of malt and of peptonized foods. The malt extracts of this class are nothing more or less than beers, and ought to be classed as such. Now that so many of the great brewers have added "malt-extract" departments to their establishments the nature of this class of so-called tonics ought to be generally understood.

The partially digested foods put up in alcohol I object to on that account. Numerous and protracted experiments with them have failed to convince me of their utility. Alcohol, when indicated, is preferably given in the form of spirits, as thus the quality and quantity can be estimated. In the alcoholic preparations exploited by manufacturing chemists we have no guarantee of either excepting the manufacturer's word, and that has been proved to be unreliable so often that we are always justified in having a reasonable doubt of the veracity of accompanying circulars. I believe that the alcohol habit is sometimes originated and fostered by the mistaken use of such preparations.

The non-alcoholic malt extracts for convalescents and for those on the borderland between health and disease I have often observed to be beneficial. They seem to increase the appetite and to assist in the assimilation of food.

Of all the artificial food preparations that I have used I believe somatose to be one of the most generally useful. It is a preparation containing the albuminous products of beef in a concentrated form, and occurs as a yellowish powder, perfectly soluble in water or in any other desirable menstruum. It is odorless and tasteless, and is usually given in solution. Clinical experience demonstrates that it is easily digested and nourishing. It causes no distress of the digestive organs, and, being odorless and tasteless, will not grow repugnant to the patient.

I will cite a few cases in which I have recently used somatose with very gratifying results.

Case I.—Miss X., aged fifty years, a school teacher. This patient was very much run down when, in October, 1895, she was taken suddenly ill with what proved to be the most tedious and refractory case of pleurisy which it has ever been my lot to be called upon to treat. She always had had a sensitive stomach, and at the outset of this illness the gastric symptoms were very distressing. For the first day or two there was considerable vomiting, the patient being unable to retain any nourishment. After the vomiting had ceased she suffered from such persistent nausea for several days that rectal alimentation had to be practised. Meanwhile milk and various other things were tried by mouth, but all proved repugnant to the patient, and all excited this persistent nausea. As a last resort I used somatose in solution in water. It caused no disturbance, and the nausea came to an unexpected end. From that time on, for seven weeks, my patient subsisted first for a few days on somatose in water, then on somatose cocoa, with occasionally gruel as a menstruum. She received daily from thirty to two hundred grains of the preparation in various solutions.

Case II.—A married woman, aged thirty years, neurasthenic, of decidedly hypochondriacal tendencies. Repeated systematic and thorough physical examinations failed to reveal any organic lesion. Worry and anxiety over her two children and over the financial affairs of her husband had made her a nervous wreck. In two years the patient had lost twenty-five pounds. She had tried for short periods of time many tonics and foods without apparent benefit. Like many patients of this class, she was willful, and refused to stick to any one line of treatment long, but was always ready to try new things that were recommended to her. I succeeded in getting her to take, in addition to her regular food, sixty grains of somatose in milk every twenty-four hours for a month. The result was marked. She improved in flesh at the rate of nearly two pounds a week. She ate better, slept better, and felt better during this time. Unfortunately, however, some friend suggested to her that she needed iron, so she dropped somatose for somebody's iron pills. Nervous dyspepsia, from which this patient suffered severely at times, left entirely while she took the somatose.

Case III.—Mrs. Z., aged thirty-one years, was delivered of her sixth child December 2, 1895. This patient suffered a great deal from gastric and nervous troubles during the last weeks of her pregnancy, and was in a much weakened condition at the time of her confinement. She was given somatose in water from the day of delivery and for a week succeeding. This was practically all the food she had until she was able to get up and do her own work, as her circumstances would not admit of securing efficient help to take care of her. She made a prompt and complete recovery.

THE SUPERIORITY OF THIOL TO ICHTHYOL.

By G. MORGAN MUREN, M. D.,
BROOKLYN,
SURGEON TO THE MANHATTAN HOSPITAL AND DISPENSARY.

It may be as well to state at the beginning that this article is not presented to the profession as embodying anything particularly new or original, the ground having been well covered by various German authors; nor is it the writer's intention to in any way detract from the value of ichthyol, which he has found useful in the past, but finally discarded for thiol; the fact, however, that many practitioners are to-day using this offensive, evil-smelling compound to the exclusion of thiol (many of them, perhaps, not having heard of the latter), which will accomplish all that ichthyol will and a little more, at the same time having none of its offensive odor, is sufficient excuse, if one be needed, for this article.

Ichthyol, being prepared from a mineral deposit rich in

sulphur and the fossilized remains of fish and sea animals, possesses the strong, evil odor common to nearly all organic sulphur compounds, and though various articles have been suggested to disguise this odor (vanillin, citronella, etc.), it is as tenacious as the bitterness of quinine and will not down. Thiol, on the other hand, is a definite synthetic compound, and as to its preparation I quote the following from Helbing's *Modern Materia Medica:* "Brown-colored paraffin or gas oils, of specific gravity 0·890 to 0·900, are treated with sulphur at high temperatures; the unsaturated hydrocarbons, which are alone attacked by the sulphur, are extracted by suitable solvents from admixture with saturated hydrocarbons. By the action of concentrated sulphuric acid, under artificial cooling, products soluble in water are obtained. When the action of sulphuric acid is complete, pieces of ice are added to the mixture; thiol separates, and is purified from acid and other impurities, including a peculiar odorous principle. It is then evaporated (*in vacuo*) to a thin extract (*thiolum liquidum*), or to complete dryness (*thiolum siccum*)." In appearance liquid thiol is much like ichthyol. It has an exceedingly faint odor, that has been compared to that of Russia leather. Its free solubility in water permits of its being easily removed from the affected part or from the clothing. It is non-irritating; indeed, patients have remarked upon its almost immediate soothing effect when applied to burns, etc.

It has been particularly recommended for use in dermatology, also in the treatment of acute infiltration of joints, contusions, subcutaneous hæmorrhages, etc., and in gynæcology.

My experience with thiol has been confined to the treatment of a variety of ulcers and some skin diseases. I feel very sure that many old, indolent ulcers, where it has appeared necessary to resort to multiple incisions, or perhaps to complete dissecting out, might have been greatly benefited and in many cases cured by continued applications of pure liquid thiol and tight bandages. In various forms of eczema and in tinea tonsurans it has given excellent results.

I have had no experience with powdered thiol, nor can I say anything as to its internal use. McLaughlin and others claim that it has none of the unpleasant effects upon the stomach of ichthyol. Following are reports of cases treated with thiol:

Case I.—K. S., female, aged eleven months. The child was brought to me to be treated for three ulcers that had recently appeared upon its left leg. Two were of the size of a ten-cent piece and the third measured one by three inches, and was situated in the bend of the knee. These ulcers had existed for almost a week before I saw the child. The mother said the child had always "snuffled," and from the father I secured a pretty clear syphilitic history. The ulcers were cleansed and dressed with iodoform, and the child was put upon bichloride of mercury, one sixty-fourth of a grain three times daily. The ulcers were dressed every other day, and in ten days the smaller ones were healed, but the large one had made no progress. It had a dull, reddish-blue appearance and practically no granulations, the centre depressed and covered with a thin secretion, the edges ragged and uneven. Pure thiol was then applied daily for four days. On the fifth day the ulcer was perfectly dry, being covered with a tough, scablike membrane, showing no raw spots and not sensitive to the touch. This hardening began at the edges of the ulcer and gradually extended to the centre. During the two weeks following this membrane peeled off, leaving fairly healthy skin where the ulcer had been. After this I did not see the child, as the family moved from the city.

This case would seem to illustrate quite well the hardening, or so called horn-forming, quality of thiol.

Case II.—Mrs. J., a charwoman, thirty-four years old, spilled boiling water over one foot and ankle, resulting in an ulcer about two by three inches in size over the tendo Achillis. The ulcer was cleansed and dressed with pure thiol every other day, and in two weeks presented the same appearance as described in Case I, and went on to complete recovery in much the same way. The woman's bowels were kept moving freely with sulphate of magnesium, and she also took a bitter tonic.

Case III.—Early in March last Mrs. H. brought me her thirteen-years-old daughter, who presented a well-marked case of tinea tonsurans. The patch was situated in the occipital region and, being hidden from view by the child's long hair, had been neglected and had received no treatment, except with such home remedies as the mother had applied, though it had existed about six weeks when I was consulted. The skin covering the patch presented the usual scaly appearance, and was of a bluish-gray color, its covering of hair exceedingly thin and broken; otherwise the girl was in good condition. The hair was cut close over the patch and for about two inches around it. The mother was directed to wash the girl's head thoroughly every other day with sapo viridis, and a fifty-per-cent. ointment of thiol in vaseline was prescribed, to be applied to the patch immediately after washing the head and at frequent intervals. Carbolized oil (1 to 20) was also prescribed, to be rubbed into the entire scalp to prevent the possible spread of the disease.

Mrs. H. informed me that she had a son twenty years old and a child four years old with the same trouble, each having one patch like the girl. I did not hear from the case again for nearly four weeks, when Mrs. H. and her daughter came to me, bringing with them the younger child. The mother had carried out the directions in all three cases and with very good results. The younger child was practically cured, as the hair was fairly thick where the patch had been, and both the hair and the skin under it presented a healthy, natural appearance. The patch on the girl's head had improved so much that the mother was directed to continue the same treatment for her. Early in May I saw the girl for what I fancy will be the last time. No more patches had appeared, and the one she did have could safely be called cured. The third patient in this family I never saw, and of course did not prescribe for him. The mother, however, carried out the same treatment with him as with the others, and has informed me that the patch on his head was apparently the same as the girl's, and that it has gone on to recovery in a similar manner. The patch on the girl's head was a little larger than a fifty-cent piece, and that on the child's head was the size of a ten-cent piece.

Of course, it is possible that new patches may appear in any of these cases. Though I did not see the son at all and the younger child only when cured, it is certainly fair to presume that all three children were affected with the same disease, and to give the credit of the cures to thiol.

74 Sands Street.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co. Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, JUNE 27, 1896.

PODALIC VERSION WITH THE PATIENT IN THE PRONE POSTURE.

In the *Centralblatt für Gynäkologie* for June 6th Dr. Mensinga says that for the last eight years he has practised podalic version with the woman in the prone posture exclusively, and with constantly increasing satisfaction. He enumerates what he considers to be the advantages of this procedure. In the first place, the axis of the pelvic outlet is directed a little upward, so that there is more play for the hand and arm. Then the forearm may be kept in a state of pronation; this gives greater freedom of action to the muscles. The uterus is somewhat shortened, together with the vagina, and, what is of much greater importance, the latter is dilated so as to admit the hand much more readily. At the same time the uterine orifice is dilated, and he has never yet met with an example of the "contraction ring" while executing version by this method. The back of the operator's hand rests all the time against the firm vertebral column, so that the soft parts run no risk of injury. By reason of the shortening of the uterus, the fœtal legs come readily into the grasp. The repugnant requirement that the patient shall lie across the bed is done away with; she lies lengthwise with a pillow under her chest and with her face turned to one side, while the operator sits down. In other words' there is less preparatory fuss, and that is favorable in its influence on the patient's morale.

By this method, two great dangers are avoided; they are rare, to be sure, but they do occur. The first is rupture at the utero-vaginal junction. With the patient lying on her back, the hand, in the endeavor to pass through a "contraction ring," tends to force the uterus upward more and more, stretching the vagina longitudinally so as to favor the occurrence of transverse rupture. The second danger averted is that of air embolism. With the woman in the supine posture, any air that may enter the vagina through the hollow of the hand tends to rise into the uterus; when the prone posture is made use of, on the other hand, the air escapes by the vulva at the first opportunity.

Dr. Mensinga lays great stress on the comparative painlessness of the procedure. He has never found it necessary to anæsthetize the patient, and does not always give her morphine; he prefers that there should be some pain to guide him in the manipulation. The most painful step ordinarily in podalic version is the passage of the hand through the vulva, and so it is in this form of version, but here everything facilitates the obstetrician's movements, and his sense of touch and his muscular sense are not so interfered with as in ordinary version, to the mother's indescribable gain. A further advantage lies in the extraordinary extent to which the state of the perinæum may be kept under observation; it is in sight all the time, so that both of the operator's hands may be occupied with the version, and yet he constantly knows whether or not a laceration is imminent.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending June 23, 1896:

DISEASES.	Week ending June 16.		Week ending June 23.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	12	2	11	1
Scarlet fever	90	7	87	5
Cerebro-spinal meningitis	1	1	3	4
Measles	209	13	193	14
Diphtheria	226	30	218	48
Tuberculosis	213	105	260	112

The Chicago Post-graduate Medical School.—Dr. Arthur R. Elliott has been elected professor of preventive medicine and urinary diagnosis.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the four weeks ending June 20, 1896:*

Von Wedekind, L. L., Surgeon. Ordered to the Naval Academy.

Siegfried, C. A., Surgeon. Detached from the U. S. Steamer Columbia and ordered to the U. S. Steamer Massachusetts.

Derr, E. Z., Surgeon. Detached from the U. S. Steamer Raleigh and ordered to the U. S. Steamer Columbia.

Beyer, H. G., Surgeon. Detached from the Naval Academy and ordered to the U. S. Steamer Raleigh.

Guest, M. S., Passed Assistant Surgeon. Detached from the U. S. Steamer Constellation and ordered to the U. S. Steamer Massachusetts.

Bryant, P. H., Passed Assistant Surgeon. Ordered to Naval Station, Newport, R. I.

De Valin, C. M., Assistant Surgeon. Detached from the Chelsea (Mass.) Hospital and ordered to the Blake.

Stitt, E. R., Passed Assistant Surgeon. Detached from the Bache and ordered to the Vermont.

Baker, J. W., Passed Assistant Surgeon. Detached from the Board of Examiners, New York, and ordered to the U. S. Steamer Bennington. He is ordered to delay reporting until July 18th.

Cook, F. C., Assistant Surgeon. Detached from the U. S. Steamer New York and ordered to treatment at the Naval Hospital, New York.

Hibbett, C. T., Surgeon. Detached from the U. S. Steamer Bennington and ordered to the U. S. Steamer Independence.

Johnson, M. K., Assistant Surgeon. Detached from the U. S. Steamer Franklin and ordered to the U. S. Steamer New York.

Percy, H. T., Surgeon. Detached from the Board of Examiners, July 1st, and ordered to the U. S. Steamer Monterey.

McClurg, W. A., Surgeon. Ordered as a member of the Medical Examining Board.

Russell, A. C., Surgeon. Detached from the Board of Medical Examiners, New York, July 5th, and granted leave of absence until August 7th, with permission to go abroad.

Stokes, C. F., Passed Assistant Surgeon. Ordered as recorder of the Medical Examining Board, New York, June 22d.

Whiting, R., Surgeon. Detached from the U. S. Steamer Monterey, ordered home, and granted three months' leave of absence.

Blakeman, R. S., Assistant Surgeon. Ordered to instruction at the Naval Laboratory, New York.

Wheeler, W. N. Assistant Surgeon. Ordered to instruction at the Naval Laboratory, New York.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from June 14 to June 20, 1896:*

Carter, W. Fitzhugh, Captain and Assistant Surgeon, is granted leave of absence for one month, with permission to apply for an extension of one month.

Society Meetings for the Coming Week:

Wednesday, *July 1st:* Nova Scotia Medical Association (first day—Sydney, Cape Breton); New York Academy of Medicine (Section in Public Health); Medical Society of the County of Richmond (Stapleton), New York; Bridgeport, Conn., Medical Association.

Thursday, *July 2d:* Nova Scotia Medical Association (second day); Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua, New York; Cuyahoga, Ohio, County Medical Society.

Saturday, *July 4th:* Clinical Society of the New York Postgraduate Medical School and Hospital; Miller's River, Mass., Medical Society.

Births, Marriages, and Deaths.

Married.

Baker—Buerger.—In Lomira, Wisconsin, on Tuesday, June 16th, Dr. Francis M. Baker and Miss Rosina Buerger.

Christie — Makepeace. — In Paterson, New Jersey, on Wednesday, June 17th, Dr. George Christie and Miss Marion Makepeace.

Copeland — Lide. — In Barnwell, South Carolina, on Wednesday, June 10th, Dr. J. L. Copeland and Miss Mamie Lide.

Curtiss—Mann.—In Buffalo, on Thursday, June 18th, Mr. Harlow C. Curtiss and Miss Ethel Mann, daughter of Dr. Matthew D. Mann.

Haas—Bostwick.—In New Orleans, on Wednesday, June 17th, Dr. Marshall Haas, of Haasville, Louisiana, and Miss Helen Henrietta Bostwick.

Halsey—Brewer.—In Vineland, New Jersey, on Thursday, June 18th, Dr. John S. Halsey and Miss Rachel Brewer.

Smith—Lamadrid.—In Brooklyn, on Wednesday, June 17th, Mr. William Henry Smith and Miss Harriet Ivins Lamadrid, daughter of Dr. Julio Lamadrid.

Died.

Bradley.—In New York, on Friday, June 19th, Mary E. Bradley, wife of Dr. Edward Bradley.

Hun.—In Albany, on Monday, June 22d, Dr. Thomas Hun, aged eighty-eight years.

Parker.—In New Canaan, Connecticut, on Saturday, June 20th, Mary Ann Parker, widow of the late Dr. Willard Parker.

Terhune.—In Passaic, New Jersey, on Saturday, June 20th, Alice Ethelyn Tucker, wife of Dr. Percy H. Terhune.

Wynkoop.—In New York, on Wednesday, June 17th, Ann E. Wynkoop, wife of Dr. G. H. Wynkoop.

Proceedings of Societies.

ONTARIO MEDICAL ASSOCIATION.

Sixteenth Annual Meeting, held in Windsor, on Wednesday and Thursday, June 3 and 4, 1896.

The President, Dr. F. Le M. Grasett, of Toronto, in the Chair.

The Treatment of Puerperal Sepsis was the subject of a paper by Dr. H. T. Machell. After referring to the prophylactic treatment and the symptoms to be observed in establishing an early diagnosis, which was an important point, he discussed the method of treatment when the puerperal infection had established itself. If inspection showed vaginal lacerations, or gray patches and foul vaginal lochia it was only necessary to disinfect the vagina, which could be done by an antiseptic douche, followed by the application of pure carbolic acid, or Churchill's tincture of iodine, to the lacerations. The parts should then be dusted with iodoform or acetanilide, but if the uterus was tender, soft, and flabby, showing that the endometrium was affected, antiseptic uterine douches or bougies might be used, alone or in combination with curetting. To ascertain what should be done, the index finger should be used to explore the whole endometrium. The curette should be used in all cases of simple sapræmia. The patient should be placed across the bed, the cervix exposed by the speculum, the anterior lip caught by a volsella, and particular notice taken to see if there was a gush of lochia on making traction. If there was, the douche tube was passed into the uterus nearly to the fundus, and a stream of bichloride solution turned in and continued until it returned clear. The whole interior of the uterus should be curetted, particular care being taken to scrape the cornua thoroughly. The author was in the habit of steadying the fundus with the left hand. If much *débris* was scraped off the douche should be used again; if very little, wiping the interior thoroughly with cotton on an applicator till it was dry was preferable. Where the uterus was soft, flabby, and thin-walled, an application of pure carbolic acid to the endometrium would disinfect it and seal up the uterine vessels.

Dr. Hummison called attention to cases where pre-existing pelvic disease, latent until parturition, was renewed by the traumatism of labor, producing a condition of puerperal sepsis. In such cases, of course, the accoucheur was wholly free from blame. He related a case recently tried in court where the medical attendant had been mulcted in damages for bad results accruing from a laceration which had not been attended to at the time of labor. So it behooved the accoucheur to be on the lookout for tears, and to repair them. He believed it was possible and proper to repair the cervix at once where it was much torn. Cases where absorption had taken place through the lymphatics, where there were a pronounced chill and high fever, the patient being apparently not ill, where there was no distention of the abdomen, where

the tongue was moist, were the alarming cases, and, if they were not promptly and thoroughly treated, the patients would die.

Tonguelike Accessory Lobes of the Liver.—A paper with this title was read by Dr. A. McPhedran, of Toronto. He first discussed the ætiology of this condition. The lobes had been attributed to undue pressure on the liver, such as from tight lacing or traction by an enlarged gall bladder. He was rather of the opinion that the formation of these lobes was developmental and had nothing to do whatever with pressure or traction. Diagrams were presented in which these tonguelike lobes were well shown. A model was also present on which these various lobes were outlined by the author.

The author gave the histories of six cases.

The Rational Treatment of Typhoid Fever was the title of a paper by Dr. Armour, of St. Catherine's. He criticised many of the various forms of treatment formerly and at present in vogue, and stated that he believed there were only a few drugs that were efficacious in the treatment of the disease. He based his theory of treatment on the relations of the secretion of the alimentary canal. He referred to Ringer's law: The alkaline saliva stimulates the secretion of gastric juice, and acid gastric juice stimulates the alkaline intestinal secretions. These conditions were seriously disturbed in typhoid fever; the mouth became dry, and, on account of saliva being suppressed in a measure, the secretion of gastric juice was diminished, partly through the effect of the fever and partly through the withdrawal of the stimulants of the saliva and the food. The intestinal glands suffered in a similar way, so that those in the lower part of the ileum were irritated and an increased flow of the alkaline secretion of this part of the bowel took place, the diseased part being bathed in an excessively alkaline solution which favored the ulcerating process; and in this alkaline medium the virus of typhoid thrived best. Hence the value of hydrochloric acid and of purgatives. By the use of the latter, the flow of gastric juice, intestinal secretion, and bile, natural antiseptics, was increased. These, bathing the diseased part, would wash away the noxious accumulations. He did not place much reliance on the antiseptic treatment. He condemned the use of turpentine.

The President's Address.—A meeting like this, said the president, brought men into close and kindly relationship, cemented old friendships, laid the foundation of new ones, and enabled them to meet face to face those whom they had never seen, but yet to whom, through their writings, they felt as though they were not entirely strangers. It allowed, by the comparison of experiences and by the recording of much valuable material, of a considerable addition to the sum total of medical knowledge. He expressed his gratification that, in regard to medical societies and associations, the profession was quite alive. There were three medical societies in Toronto and quite a number of local ones through the Province; and it was pleasing to see that they were well attended, that thoughtful papers were read, and that discussion was keen. This could not fail to elevate the profession and to raise it in public estimation. The laity would see that the members of the medical profession were not mere bread-and-butter earners, but scientific, enlightened men, ever seeking light and ever striving for the truth.

The question of having four years of study instead of five for the medical course, and of lengthening the term to eight or nine months, was favorably considered. He pointed out that advantages would accrue both to teacher and to student.

He referred to the question of interprovincial registration which was to be considered at the coming meeting of the Canadian Medical Association. This step would first need to be taken before reciprocal registration could be hoped for between Canada and the United Kingdom.

He then dwelt at considerable length on the matter of establishing a national sanitarium which was now being carried forward.

The Treatment of Mammary Carcinoma was the subject of a paper by Dr. William Burt, of Paris. He referred to the contributions of Dr. Bull and Dr. Meyer, published in the *Medical Record* in 1894, that of Dr. Halsted in the *Annals of Surgery* in 1894, and that of Mr. Watson Cheyne in the Lettsomian Lectures recently delivered. As to the statistics in regard to mortality in these cases, he was pleased to note the strides that had been made in this department of surgery, and that the percentage of cures had been so great and the percentage of recurrences so small. This had been brought about by doing the wide operation. He called attention to the necessity of a correct and early diagnosis of these cases. He was sorry the pathologist was not always to be relied on. In every case in which it was proposed to do the wide operation malignancy should first be diagnosticated. No woman cared to be unnecessarily mutilated, to undergo an operation which in a measure unsexed her. It was pretty well agreed that the infected region should be removed in one piece, for fear of infecting the wound. The author presented two specimens thus removed *en masse* by him.

Dr. McKeough said the old plan of partial removal had done a great deal to produce a want of confidence in surgical skill. While pain was relieved and the anxiety of the patient quieted with false hopes for a short time, a cure was rarely ever hoped for by the surgeon. Billroth's eight cures in one hundred and forty-three cases, published in 1878, were the best given up to that time. How vastly different now! Surgeons, in giving their statistics, had unanimously adopted the three-year limit; they recorded as cures those cases which, after the expiration of three years, showed perfect health and no sign of any local recurrence. The speaker then quoted the statistics of Bull, Cheyne, and Halsted, all of which went to prove that cancer of the breast was curable if operated on in time and the wide method employed. He detailed the method of preparing the patient, making incisions and dissections, dressing, and subsequent treatment.

The Preservation of the Perinæum.—This subject was discussed by Dr. C. B. Oliver. He believed that the precaution of preserving the perinæum was one of great importance, and one often not duly observed. It was much better to save a perinæum than to mend a lacerated one. To limit the field of gynæcology was a legitimate aim, and should be that of every conscientious accoucheur. His success in saving the perinæum had been marked by attention to the following points:

If a rigid perinæum offered resistance to the progress of labor, efforts should be directed to securing full expansion. This was done by stretching the perinæum with two fingers of the right hand during the pains. When the head began to distend the vulva, two fingers should be introduced behind the occiput and this part of the head brought well down under the pubic arch. Then, between pains, the head should be extracted, the second finger of the right hand being introduced into the rectum beyond the child's chin, the disengaged left hand being used to press the perineal tissues from each side toward the median line. The patient was cautioned not to bear down. The head might be brought into the world at the will of the operator.

The Treatment of Neurasthenia.—This was the title of a paper read by Dr. E. E. Harvey, of Norwich. In the treat-

ment of this affection it should be borne in mind that one mental state tended not only to prevent the supervention of another, an opposite mental state, but also to induce kindred mental states. The first thing to do was to produce an opposite mental state. To this end the physician should give plenty of sympathy and encouragement to the patient. The nurse should be not only faithful, but enthusiastic and cheerful. As the neurasthenic was peculiarly open to suggestion, this could readily be taken advantage of by the physician in the early stages of treatment to induce a healthier state of mind.

The physician's suggestion should always be of a positive character and should be such as to give the patient mental employment. Her social and professional environment should be carefully inquired into. He outlined some of the principal points which should receive attention—viz., rest, nourishment, massage, electricity, and various forms of medication. For the anæmia he recommended dialyzed iron, citrate of iron and quinine, and Blaud's pills, or albuminate of iron made by putting a few drops of tincture of chloride of iron into a solution of white of egg in water. He dwelt at some length upon the use of electricity.

The Absorbable Ligature in Abdominal Surgery.—In a paper on this subject, Dr. M. D. Mann, of Buffalo, said the arguments in favor of absorbable ligatures seemed to be incontrovertible. First, they did away with some of the dangers following infection. If infection occurred, as might readily happen in a case of ovarian abscess or some other pus collection where the pus still retained its infectious properties, within a short time the catgut softened, liquefied, and disappeared. It had done its work; it was of no further use and was destroyed. If pus had collected, the cure of the abscess or sinus was not complicated by the presence of a focus of infection. In normal, uncomplicated cases the catgut was soon absorbed and disappeared, which did away with all chance of late infection. It seemed an ideal surgical appliance, so simple, so safe, and so sure that it was very difficult to understand why others did not see it. One objection raised against it was that it was impossible to sterilize it. This he was able to deny absolutely, as his ligatures had had the most careful bacteriological tests. Another objection raised was that catgut was likely to slip. This would not happen if the operator understood the way of tying it. It should not be used after having been placed in water, unless properly prepared, after which water did not affect it. If used dry directly from the alcohol, it was not much more likely to slip after tying the first knot than silk was. He had never seen an accident attributable in any way to this use of catgut. In only one condition would he use silk, and that was in the intestinal suture.

(*To be concluded.*)

Book Notices.

Text-book of Comparative Anatomy. By Dr. Arnold Lang, Professor of Zoology in the University of Zurich. Translated into English by Henry M. Bernard, M. A. Cantab., and Matilda Bernard. Part II. London and New York: Macmillan & Co., 1896. Pp. xvi–618. [Price, $5.50.]

It is something more than four years since the notice of the first volume of this work appeared in our columns, and the translators state that this delay in the issue of the present volume has been due partly to a delay in Germany in the publication of the third and fourth parts of the original work, which constitute the second volume of the translation, and partly to the increased difficulty in the work of translation.

This volume contains three chapters—the seventh, on *Mollusca;* the eighth, on *Echinodermata;* and the ninth, on *Enteropneusta.*

In the chapter on *Mollusca*, the five classes are described in general, with special descriptions of the integument, the shell, the various organs, and the muscular, nervous, and circulatory systems of each of the classes and of different orders therein. The same arrangement is followed in the chapters on *Echinodermata* and on *Enteropneusta.*

There are almost five hundred illustrations, most of them from original drawings by the author, who has been indefatigable in his effort to depend upon original sources alone for the subject matter of the work.

The translators have succeeded very well in accomplishing what must have been an arduous task, and have favored English-reading specialists by making this excellent comparative anatomy of the *Invertebrata* an accessible volume.

Atlas of the Diseases of the Skin, in a Series of Illustrations from Original Drawings, with Descriptive Letterpress. By H. Radcliffe Crocker, M. D., F. R. C. B., Physician to the Department for Diseases of the Skin, University College Hospital, etc., London. Fasciculus XIV. Edinburgh and London: Young J. Pentland. New York: Macmillan & Co., 1895. [Price, $6 each part.]

The eleventh fasciculus of this *magnum opus* of dermatology contains plate xxxi, which illustrates a case of lichen planus acutus affecting the trunk; plate lxxiv, which depicts lymphangeiectodes of the neck, the right and the left side, and the lower lip; plate lxxv, which shows an extreme instance of xeroderma pigmentosum in a girl aged twelve years; plate lxxxiii, which portrays three forms of milium and an example of grouped comedones of childhood; plate lxxxiv, which illustrates acne vulgaris as seen on the back and acneiform folliculitis of the buttocks; and plate xciv, which shows several phases of tinea circinata.

The twelfth fasciculus includes plate iv, which depicts an example of peliosis rheumatica that occurred in association with visceral complications, and also an instance of erythema hæmorrhagicum that developed with virtually no preliminary symptoms; plate ix, that portrays instances of eczema pustulosum, eczema rubrum, and eczema of the nipple (Paget's disease); plate xxvi, which represents a remarkable case of psoriasis follicularis that closely resembled lichen ruber, and that had recurred annually in the patient since her fourteenth year; plate lxxi, which portrays an example of multiple telangeiectasis and of telangeiectasis secondary to lupus erythematosus; plate lxxiii, which shows cases of fibroma simplex and pendulum, in one of which the patient had been affected with the disease for forty-four years (his case was illustrated in plate xviii of the Sydenham Society's *Atlas of Skin Diseases*); and plate lxxxvii, which illustrates adenoma sebaceum and follicular fibroma of the back affecting the same person.

The thirteenth fasciculus contains plate iii, which shows examples of erythema iris and erythema nodosum; plate xxviii, which depicts marked examples of psoriasis diffusa, psoriasis acuta palmaris, and psoriasis acuta plantaris; plate xxxiii, which illustrates lichen acuminatus, the pityriasis ru-

bra pilaris of French writers, a rare affection in England, as the author states; plate lvii, which portrays two examples of molluscum contagiosum and also the distribution on the anterior and posterior aspects of the body of an extensive capillary vascular nævus that was somewhat improved by the use of the galvano-cautery; plate lxvi, which represents two forms of lupus erythematosus in which the elementary lesions imitated ordinary forms of dermatitis; and plate xciii, which illustrates a case of tinea cruris and one of larva migrans.

The fourteenth fasciculus contains plate i, which represents erythema papulatum and erythema iris; plate xi, which depicts eczema papulo-squamosum; plate xii, which illustrates impetigo contagiosa, pompholyx, and pemphigus of the soft palate; plate xlix, which portrays a patient affected with scleroderma circumscriptum at two different age periods; plate lxii, which shows examples of tuberculosis cutis, or scrofulous lupus; and plate xci, which represents cases of favus of the head and of the neck, and of tinea sycosis.

The fifteenth fasciculus includes plate x, which represents different forms of dry, scaly eczema, including examples of eczema seborrhoicum, eczema verrucosum, and eczema squamosum; plate xxii, which portrays instances of hydroa herpetiforme and æstivale and of erythema ab igne; plate lxiii, which illustrates different varieties of ulcerating lupus; plate lxvii, which shows a case of lupus erythematosus of the hands, and contrasted with it the hands of a person affected with a rare form of the disease, first described by the author, in which the patches have a marked resemblance to those of lichen planus; plate lxxix, which is a beautiful illustration of that rare disease, chromidrosis, in which the black pigmentation diminished after purgation and also after the catamenial period; and plate lxxxv, which shows a case of acne rosacea, also an example of rhinophyma following that disease.

The letterpress accompanying the illustrations gives not only a *résumé* of the ætiology and pathology of the disease, but the history of the case and the methods of treatment followed. All that has been said heretofore in commendation of the excellence of this work is sustained by the present fasciculi, and the completed work must prove invaluable to the dermatologist.

BOOKS, ETC., RECEIVED.

The Fundus Oculi. With an Ophthalmoscopic Atlas illustrating its Physiological and Pathological Conditions. By W. Adams Frost, F. R. C. S., Surgeon to the Royal Westminster Ophthalmic Hospital, etc. Edinburgh and London: Young J. Pentland. New York: Macmillan & Co., 1896. Pp. xviii–228. [Price, $18.]

A Text-book of Bacteriology. By George M. Sternberg, M. D., LL. D., Surgeon General United States Army, Honorary Member of the Epidemiological Society of London, etc. Illustrated by Heliotype and Chromolithographic Plates and Two Hundred Engravings. New York: Wood & Company, 1896. Pp. xi–3 to 693. [Price, $5.50.]

The Diagnosis and Treatment of Diseases of the Rectum. Being a Practical Treatise on Fistula, Piles, Fissure and Painful Ulcer, Procidentia, Polypus, Stricture, Cancer, etc. By William Allingham, F. R. C. S. Eng., Ex-member of the Council of the Royal College of Surgeons of England, etc., and Herbert W. Allingham, F. R. C. S. Eng., Surgeon to the Great Northern Hospital, etc. Sixth Edition. New York: William Wood & Company, 1896. Pp. xiii–485.

The Three Ethical Codes: The Code of Ethics of the American Medical Association, its Constitution and By-laws. The Code of Ethics of the American Institute of Homœopathy. The Code of Ethics of the National Eclectic Medical Society. Detroit: The Illustrated Medical Journal Co., 1896. Pp. 55. [Price, 50 cents.]

Physics for Students of Medicine. By Alfred Daniell, M. A., LL. B., D. Sc., F. R. S. E., Examiner in Physics to the Royal College of Physicians of Edinburgh, etc. London and New York: Macmillan & Co., 1896. Pp. xv–469. [Price, $1.25.]

The Eighteenth Annual Report of the State Board of Health of the State of Connecticut, with the Registration Report for 1894 relating to Births, Marriages, Deaths, and Divorces.

The Annual Reports of the Managers and Officers of the State Hospitals of New Jersey for the Year ending October 31, 1895.

On the Relationship between Inflammation and Sundry Forms of Fibrosis. By J. George Adami, M. A., M. D., of Montreal. [Being the Middleton-Goldsmith Lectures for the Year 1896, delivered before the Pathological Society of New York, and reprinted from the *Medical Record.*]

Once More on Antitoxine. By Carl Strueh, M. D, of Chicago. [Reprinted from the *Journal of the American Medical Association.*]

Congenital Teeth, with Three Illustrative Cases. By J. W. Ballantyne, M. D., F. R. C. P. E., F. R. S. E., Edinburgh. [Reprinted from the *Edinburgh Medical Journal.*]

Curettage of the Uterus. History, Indications, and Technique. By J. W. Ballantyne, M. D., Edinburgh. [Reprinted from the *Edinburgh Medical Journal.*]

Chest Drainage in Empyema. By J. J. Brownson, M. D., of Dubuque, Iowa. [Reprinted from the *Tri-State Medical Journal.*]

A Neurologist's Farewell. Valedictory to the Graduating Class of Barnes Medical College. By C. H. Hughes, M. D. [Reprinted from the *Alienist and Neurologist.*]

A Case of Double Salpingo-oophorectomy, with Excessive Loss of Blood from Separated Adhesions necessitating a Second Operation within Three Hours; Infusion with Sterile Normal Salt Solution during the Second Operation; Recovery. By Hunter Robb, M. D., Cleveland. [Reprinted from the *American Journal of Obstetrics.*]

A Brief Description of the New Lakeside Hospital. By Hunter Robb, M. D., Cleveland. [Reprinted from the *Cleveland Medical Gazette.*]

Twentieth Century Practice. An International Encyclopædia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by Thomas L. Stedman, M. D. In Twenty Volumes. Volume IV. Diseases of the Vascular System and Thyreoid Gland. William Wood & Co., 1895. Pp. v–3 to 841.

Borderland Studies. Miscellaneous Addresses and Essays pertaining to Medicine and the Medical Profession, and their Relations to General Science and Thought. By George M. Gould, A. M., M. D., etc. Philadelphia: P. Blakiston, Son, & Co., 1896. Pp. 11 to 384. [Price, $2.]

Sterility. By Robert Bell, M. D., F. F. P. S. G., Senior Physician to the Glasgow Hospital for Diseases Peculiar to Women. London: J. & A. Churchill, 1896. Pp. vi–9 to 88. [Price, $1.75.]

Climate and Health. Edited, under the Direction of Professor Willis L. Moore, Chief of the Weather Bureau, by W. F. R. Phillips, M. D. Vol. II. No. 2. A Summary of Statistics for the Four Weeks ending February 29, 1896. [United States Department of Agriculture.]

Year-book of the United States Department of Agriculture for 1895. Washington: Government Printing Office, 1896. Pp. 3 to 656.

Affections chirurgicales du tronc (rachis, thorax, abdomen, bassin). Statistique et observations. Par le Dr. Polaillon, chirurgien de l'Hôtel-Dieu, etc. Paris: Octave Doin, 1896. Pp. 550.

Forest Preservation. First Annual Report of the Chief Fire Warden of Minnesota. For the Year 1895.

Annual Reports of the Managers and Officers of the State Hospitals of New Jersey for the Year ending October 31, 1895.

Thirty-fifth Annual Report of the Cincinnati Hospital to the Mayor of Cincinnati, for the Fiscal Year ending December 31, 1895.

The Seventy-second Annual Report of the Officers of the Retreat for the Insane at Hartford, Connecticut. April, 1896.

Syphilis of the Vital Organs. By Henry Alfred Robbins, M. D., of Washington, D. C. [Reprinted from the *Virginia Medical Monthly.*]

The Management of Filiform Stricture of the Urethra, with Some Observations on Stricture. By J. D. Thomas, M. D., of Pennsylvania. [Reprinted from the *Journal of Cutaneous and Genito-urinary Diseases.*]

New Inventions, etc.

A NEW NASAL CUTTING FORCEPS OR CONCHOTOME.

By Frank S. Milbury, M. D.,
BROOKLYN.

I believe that, with one exception, all of the conchotomes in the market open vertically, which, in my opinion, is detrimental to an easy and successful operation on the middle turbinated body. Without doubt it has been and is being done constantly with such instruments, but they are too thick, and open in the wrong direction.

The best nasal forceps opening laterally is that suggested by Dr. Gleitsmann; but my objection to that instrument is that it has not sufficient cutting power and does not cut entirely through the tissue, thus leaving the section to be torn away with the forceps, thereby giving double pain and prolonging the time of operation; and, secondly, that one is required for each side.

I have devised a conchotome opening laterally, made by Tiemann & Co., and represented in the drawing, which, I think, overcomes the many objections of other instruments used for the same purpose. In my hands it works admirably.

Miscellany.

The Coolie Itch.—In an article in the June number of the *British Journal of Dermatology* Mr. J. Numa Rat, M. R. C. S., of St. Kitts, states that the name coolie itch is given to a skin affection in the West Indies, and that it originated in the general belief that the disease was introduced by the Chinese or East Indian laborers who were called coolies. The following case is that of a West Indian negro who had always been in excellent health with the exception of the itching and consequent sleeplessness caused by the eruption. The patient stated that he was ignorant of the source of the affection, and that he had not come in contact with any one who could have communicated it to him. Some months before, says Mr. Rat, the patient noticed on the outer side of his right leg, above the ankle, a crop of papules which caused considerable itching. They were followed, after an interval of a few days, by others higher up the leg; and thus the eruption spread gradually to the rest of the same limb, to the other leg, to the abdomen, to the chest, to the back, and lastly to the arms. The hands, the feet, and the head and neck were practically unaffected. The peroneal aspects of the legs were formerly the sites of the most severe pruritus and the most fully developed form of the eruption. At present the back and the arms were the parts in which the intensest itching was experienced; but in no other region of the body had any patches been observed at all approaching in size those seen on the legs. The itching which accompanied the disease was greatest during the papular stage. It became worse when the patient was in bed, or when his body was heated by exertion or by exposure to the sun.

The papules in this case never became vesicular. They only increased in size circumferentially, the violent scratching which was provoked by the itching having apparently excited them to more rapid growth. As they developed they lost their acuminate shape, and broadened into wheals of various sizes, which, on coalescing, formed the large patches on the legs. These patches consisted of a thick, yellowish-white pellicle resting on purple ichorous tissue—apparently granulation tissue—slightly raised above the level of the adjacent skin. On being forcibly detached, the pellicle was found to be irregularly attached to the tissue beneath, so that, after its removal, its under surface presented a honeycombed appearance. The patient attributed the condition of the large patches on his legs to the amount of scratching which they had undergone; for it was in the lower limbs, as already stated, that the intensest pruritus was experienced. By violently scratching one of his legs he once partially removed a large portion of pellicle from one of the patches; but this, on being replaced, adhered as before to the subjacent tissue.

There were neither pustules nor ulcers to be observed about any part of his body.

The eruption was noticeably absent from such parts as the interdigital folds, the wrists, etc., where the *Acarus scabiei* chiefly lodges; but no acarus was found in or about the patient's body.

The slate color of the eruption on the leg was presumably due to the purple tint of the tissue on which the pellicle rested; for, after removing the latter, it appeared yellowish white. (The author states that he is unable to say whether this peculiar color of the eruption is frequently observed in the disease. Dr. W. J. Branch, of St. Kitts, who first saw the case, also noticed this peculiarity of color about the patches on the legs, but he could not say whether it had been absent in his previous cases or whether it had rather escaped his observation.)

Dr. Nicholls, in his report on yaws, published for the Colonial Government in 1893, gives the following account of coolie itch as it is observed in St. Lucia: "The eruption first appears as a small vesicle which becomes pustular; the yel-

lowish pus then partly dries and forms a moist gamboge-colored crust. Under the crust the skin ulcerates, and the ulceration spreads and may join other ulcers produced in the same way. On removing the crust, a shallow, dirty ulcer is seen, of an irregular shape and with sharply defined edges. The pustules and ulcers are very painful, and the patients appear to suffer constitutionally from the disease. Adults are more frequently attacked, but many children also suffer rom the affection, which appears to have been unknown inf St. Lucia until after the arrival of the East Indian immigrants."

This account of coolie itch, says the author, differs so much from the present case that he was led to make inquiries on the subject of Dr. W. J. Branch, who has had a large experience of the skin affection, and he stated that it had been unknown in this island until about ten years ago, when it had been introduced by East Indian laborers from the neighboring island of Nevis; that since then it had appeared and disappeared at intervals, as if occurring epidemically; that it was highly contagious; and that he knew an instance in which a colored nurse had communicated it to a white child, from whom it had been contracted by both parents. He stated that in the genuine coolie itch observed by him in St. Kitts there were neither pustules nor ulcers; and that the symptoms in all the cases which he had seen were similar to those of the patient who is the subject of this paper.

There are two diseases, continues Mr. Rat, which bear a resemblance to coolie itch, as it is described by Dr. Nicholls —viz., the kra-kra or craw-craw of the west coast of Africa, and the *dermatose parasitaire*, a case of which is recorded by Nielly. O'Neil's account of kra-kra states that the eruption in that skin affection is attended by intense pruritus, and consists of papules scattered generally over the trunks and limbs, which in four days are transformed first into vesicles and then into pustules. Nielly noticed in a French lad, whose life had been chiefly passed in a country district in France, a pruriginous eruption characterized by red patches on which papules quickly developed. These papules were soon transformed into vesicles, and the vesicles into pustules, which became incrusted.

It is evident that these skin affections, says Mr. Rat, while resembling the coolie itch of St. Lucia as reported by Dr. Nicholls, with the exception of the ulceration mentioned by him, are quite unlike the coolie itch of St. Kitts as it is here described. The papules in the present case never became vesicular or pustular, but slowly broadened into wheals which coalesced and formed the patches of various sizes already mentioned.

In both the kra-kra of O'Neil and the *dermatose parasitaire* of Nielly a filarialike organism was observed in the papule. A microscopical examination of portions of the patches of the eruption on the leg in this case revealed no parasites. The papules on the arm were not examined, as the patient did not return for the purpose as requested.

The author adds that, although Dr. Nicholls searched carefully for it in several patients, he failed to find the *Acarus scabiei* in the cases of coolie itch which came under his observation in St. Lucia.

A Case of Tuberculosis by Ingestion.—The June number of the *Revue mensuelle des maladies de l'enfance* contains an account of a case which came under M. Marfan's observation at the Hôpital des enfants malades. The patient, a little girl sixteen months old, was very cachectic; the entire body was exceedingly emaciated and the limbs were very small. On both sides of the neck were seen ganglia of about the size of a nut; the breath was very fœtid and a brownish liquid ran from the mouth. On the upper right gum there was a deep ulceration, which extended superficially toward the arch of the palate and along the entire length of the upper gum. No tubercles were found. An examination of the thorax did not reveal any anomaly; there was adenopathy in the inguinal region, but not in the axilla. The abdomen was distended and ridged with dilated veins. There were from five to six yellow stools every day, but there was no fever. The case was thought to be one of common chronic gastro-enteritis with acute attacks, and the proper treatment was instituted, but the cachexia persisted and the child died a few days after its entrance into the hospital.

The autopsy revealed the following lesions: The intestine was raised by an enormous mass of tuberculous mesenteric ganglia. When the colon was opened a marked protuberance, composed of solitary follicles, and three small tuberculous ulcerations were seen; near one of them a mesenteric ganglion as large as a pea was found on the intestine. In the ileo-cæcal angle several large ganglia were found adhering to the cæcum, the ileum, and the ileo-cæcal appendix. The ileo-cæcal valve was completely eaten away by a large, irregular tuberculous ulceration which had invaded the cæcum and the ileum. In the cavity of the appendix there was a small lenticular ulceration.

Large tuberculous ulcerations were found along the entire length of the ileum, and on the peritoneal surface was seen a growth of tuberculous granulations. The ulcerations were not numerous in the jejunum, but many small ones were found in the duodenum. The mesenteric ganglia were as large as nuts and contained caseous matter. There were no tuberculous or ulcerative lesions in the stomach, and the liver, the spleen, and the kidneys were normal in size and appearance, and contained no tubercles. The lungs presented a number of semitransparent and very small granulations of a grayish appearance, which were evidently of recent origin; the bronchial ganglia were of the size of a pea and contained gray granulations scarcely visible to the eye; at the base of the right lung two small spots of broncho-pneumonia were found. The heart was normal, and the small ganglia of the fold of the groin did not contain any tuberculous granulations.

The evolution of the lesions during life, says the author, and their distribution after death left no doubt as to the origin of this tuberculosis. The disease was localized first in the mouth and the ganglia of the neck, and afterward in the intestine. The lesions found in the thorax were manifestly of recent origin, while those of the digestive tract were of long standing.

The child belonged to a tuberculous family of which the mother and two sisters suffered from the disease. The tuberculous virus had penetrated the digestive tube either with the mother's milk or with cow's milk which had been given to the child by a neighbor. Again, the virus might have been communicated by soiled objects which the child had carried to its mouth. The latter process of contagion is by no means improbable, says M. Marfan, as the child lived in tuberculous surroundings. However, he says, it is impossible to formulate a positive opinion without proof.

Tuberculosis of the mouth is very rare during infancy, and in this case, as no tuberculous granulations were found around the ulcer on the gum, the bacillary nature of the stomatitis which was presented may be doubted. Nevertheless, continues M. Marfan, the long duration of these ulcers, which no treatment prevented from spreading, their destruc-

tive character, and the caseous adenopathy of the neck rendered their tuberculous nature extremely probable, and the adenitis was certainly tuberculous.

The tuberculous ulcerations of the intestine were remarkable for their number, extent, and depth, and showed, furthermore, the intensity of the intestinal infection, and that the inoculation had been excessive and repeated. From this, says M. Marfan, it must be admitted that deglutition of the substances produced by the ulceration of the gum was the principal factor in the intestinal infection. The marked contraction of the intestine was also an important fact, for in the gastro-enteritis peculiar to nurslings there is usually elongation of the intestine.

On the Therapeutical Employment of Thyreoid Preparations.—This was the subject of an important paper presented at the Fourteenth Congress of Internal Medicine, held in Wiesbaden in April, by Professor Ewald, of Berlin (*Wiener medizinische Blätter*, June 4, 1896). The author began by crediting the Geneva physiologist Schiff with having first suggested overcoming the sequelæ of thyreoidectomy by implanting the gland of another animal. The path in therapeutics was pointed out when it came to be understood that myxœdema, sporadic cretinism, endemic cretinism, and cachexia strumipriva, or thyreopriva, depended on the loss of the thyreoid gland or its functional inadequacy. Horsley in England and Bircher in Switzerland, almost simultaneously, had been the first to obtain practical results by thyreoid implantation. Then there had come into use glycerin extracts of the gland, and particularly precipitates obtained by the action of alcohol, afterward the fresh gland, and finally the dried substance of the gland in various forms and from different sources—the sheep and the hog.

Then had come Baumann's epoch-making discovery of the presence of an organic iodine compound, *thyreoiodine*, in the thyreoid gland, and this had given a new turn to our realization of thyreotherapeutics. In regard to Fränkel's thyreoantitoxine, we had thus far only the discoverer's few experiments on animals. Thyreoiodine, however, seemed to point to a most essential improvement in our therapeutic armor and to a highly interesting promotion of our physiological knowledge—and that, too, without really upsetting what had previously been observed and ascertained. By thyreoiodine we were guaranteed the long-sought-for exactness of dosing and the necessary purity of the active principle in a higher degree than before. According to observations by Roos, Treupel, and the author, thyreoiodine contained within itself the entire specific constituent or constituents of the thyreoid gland, and might therefore be substituted for the fresh gland and for the extracts and dried preparations of it. Thyreoiodine was certainly not identical with a substance found by Notkin to accumulate in the system after the removal of the thyreoid gland, or with either of two substances discovered in the thyreoid gland by Fränkel, of Vienna, which, for that matter, had been used only on animals, and then had not led to complete cure.

With regard to the action of thyreoid-gland preparations, we had to distinguish between two constituents; one of them gave rise to objectively recognizable changes of metabolism, and the other was related to certain subjective symptoms which ranged from slight discomfort to pronounced morbid phenomena, constituting *thyreoidism*. Under certain circumstances metabolism might be notably heightened by thyreoid preparations, and this heightening could not fail to affect the general condition, expressed by debility, loss of appetite, nausea, thirst, sleeplessness, depression, dizziness, pains in the back and in the loins, increased frequency of the pulse, palpitation of the heart, sensations of oppression, and stenocardiac attacks. These phenomena were more or less pronounced in all cases of sudden alteration of metabolism which were connected with a rapid breaking up of a substance containing albumin and with a heightened combustion of fat.

The employment of thyreoiodine, even to the amount of a drachm in twenty-four hours, had no material influence on the pulse. There could be no chance of iodine poisoning, because the amount of iodine contained in the thyreoid gland and its preparations was very small (one part of the sheep's thyreoid contained 0·0003 of one part of iodine); such consequences, however, as increased frequency of respiration, headache, pains in the limbs, salivation, urticaria, palpitation, and tremor had been chiefly reported. Often enough, on the other hand, there was no reaction, in spite of the employment of large amounts of preparations known to be active. Besides the toxic symptoms mentioned, albumin, casts, and sugar were occasionally found in the urine. The author had been the first in Germany to call attention to the occurrence of mellituria after thyreoid treatment, after another case had been observed by Dale James. Other similar observations had since been reported, including Dennig's and Scholz's. In the majority of these cases the excretion of sugar had been only temporary, but in one observed by the author, that of a woman, after having first occurred off and on, it had settled down into a continuous diabetes from which the patient was still, four years after its first appearance, suffering, or rather not suffering, for beyond the glycosuria she had no subjective or objective symptoms of diabetes. In the many cases in which of late years the author had employed thyreoid-gland preparations he had almost invariably examined the urine for sugar, but had never found glucose, even in corpulent patients. He had therefore been surprised to learn that Noorden had observed glycosuria five times in seventeen cases of thyreoid feeding in the corpulent, although it had quickly disappeared on discontinuing the treatment. It would be interesting to observe whether this phenomenon took place also in the thyreoiodine treatment, with the avoidance of all sugar in the preparation; we should then know whether its occurrence was due to the specific action inherent in the gland or was a toxic by-effect.

To a comprehension of the thyreoid-gland treatment our present knowledge of the function of the gland was of importance. There was produced in the thyreoid gland a specific secretion which consisted of an organic iodine compound in which the iodine was in close combination. The amount varied from 0·2 to 0·5 per cent. of the fresh gland, and about ten per cent. of the compound was iodine. This secretion was continuously being carried into the circulation in minute amounts, where its office was to destroy certain poisonous substances of unknown nature whose existence was inferred from the toxic phenomena which followed loss of the gland or of its function—athyreosis or ecthyreosis. That these phenomena were not merely accidental rested as well on their nature, which was always in part that of active irritation, as on the results of replacing the defective secretion or of artificial increase of it—hyperthyreoidism. Moreover, the secretion acted as an antidote to certain toxines which appeared as by-products of metabolism. If the secretion was insufficient, these toxines accumulated and metabolism was reduced; if it was secreted or introduced into the system in excess, so that the point of neutralization was overstepped, and there was too much thyreoiodine in the organism, the specific effects of this substance would show themselves. That the gland bore an essential part in metabolism was evident from

the facts that as soon as an excessive amount of thyreoiodine gained access to the circulation an acceleration of metabolism occurred, even to the point of a morbid increase, and that, conversely, its reduction was the result of failure or deficiency of the glandular secretion. The difference between the normal and the pathological state was one of degree only, and in this matter the behavior of the thyreoid was in no wise different from that of other glands, for example, the stomach.

In regard to the dose of thyreoiodine, the rule had been promulgated to begin with minute doses, to increase them gradually, and not to make them too large at any time. It had been shown that the employment of very large quantities —the equivalent of one or two glands—had no therapeutic advantage, but sometimes did harm by causing a sudden outbreak of thyreoidism. The daily maximum allowable might now be regarded as ten tablets, corresponding to 0·045 of a grain of iodine.

Unquestionably, the prime indication for the use of thyreoiodine was found in myxœdema, but it was almost the same in sporadic, or infantile, cretinism. Numerous instances, chiefly in English and American literature, but many also reported in France, Switzerland, and Germany, gave proof of the favorable effect of the treatment. The idea of using the thyreoid preparations in skin diseases had been founded on observations of the myxœdematous, in whom a striking improvement of the state of the skin and of the general nutrition had been seen to follow their employment. The treatment was especially useful in psoriasis vulgaris, in lupus, in ichthyosis, in xerodermia, and in sclerodermia. Abundant as the material already was in this domain, it seemed to the author that the dermatologists, at least in Germany, were still rather cold toward this treatment. The greatest reserve, however, was justifiable, especially with regard to psoriasis, in which it was well known that spontaneous and utterly unexpected recoveries were not infrequent. It was different with the treatment of corpulence, which must make an impression on the observer who recorded the great loss of weight by the myxœdematous. It was the American physicians Barron, Putnam, and others who had first employed thyreoid preparations in this direction. In Germany the first had been Leichtenstern, and the author himself had soon followed with similar experiences. The efficiency of the thyreoid preparations in corpulence had indeed quickly spread in medical circles and among the laity, and even the untoward by-effects of the forced or too long continued treatment were so well known that the author no longer had occasion to adduce examples of them. A loss of weight to the extent of ten kilogrammes in six weeks—on the average, of from four to five kilogrammes—by the daily use of from three to five tablets took place, but it was only in exceptional cases that the reduction of flesh proved lasting. Since it might be considered certain that metabolism as a whole, including the destruction of albumin and the combustion of fat, was increased by the thyreoid treatment, independently of any special change of diet, as Richter's experiments had shown, the loss of albumin might be reduced to a very small one by increasing the ingestion of albumin, and so an ideal treatment of obesity be made use of, one that would reduce the fat without detriment to the albuminous constituents of the body.

Two questions, however, were still to be met: 1. Why was it that many corpulent persons were completely refractory to thyreoiodine? 2. Had thyreoantitoxine or thyreoiodine the same action as the entire gland? As regarded their behavior under thyreoid treatment, obese persons could not be grouped into those who had grown corpulent in consequence of improper diet and those who had become fat in spite of a strict regimen; in each of these groups there were those in whom this treatment acted favorably and those in whom it acted unfavorably. There were certain conditions under which the system clung pertinaciously to its fatty elements. This was most forcibly shown in pernicious anæmia. The striking obesity of persons who died of this disease showed how obstinately the organism might preserve its fat in spite of the ingestion of nutritious material being reduced to the utmost, and, as recent investigations had surely shown, in spite of the fact that the oxidation processes, or, to speak more explicitly, the assumption of oxygen and the loss of carbon dioxide were not reduced. The second question the author answered in the affirmative, and cited instances of a rapid and decided reduction of obesity as the result of treatment with thyreoiodine.

Professor Ewald concluded by saying that, everything being taken into account, it must be acknowledged that in the thyreoid preparations we had agents as powerful in their action as they were mysterious. It had been the practical insight of the Anglo-Saxons that had first resorted to the treatment, rather empirically, but his countrymen might still be proud that German science had first worked out its scientific basis, to which Baumann's discovery was of the greatest importance.

Aid to the Students of Columbia University.—Two years ago a committee on aid for students was constituted. The committee consists of Professor Kemp, of the faculty of pure science, chairman; Professor Fiske, of Columbia College (the new name for the school of arts); Professor Huntington, of the faculty of medicine; Professor Burdick, of the faculty of law; Professor Hutton, of the faculty of applied science; Professor Giddings, of the faculty of political science; and Professor Todd, of the faculty of philosophy.

At the close of the second year of its existence, in June, 1896, the committee made a report to the alumni residing in or near New York. From this report it appears that students have been assisted in securing remunerative employment as follows: Teaching, 35; stenography and typewriting, 12; general, 57. Teaching has included private tutoring, work in night schools, and serving as traveling companion. Under the head of general are specified business during vacation, amanuensis work, work for political organizations at election time, and several other forms of employment. The committee has upon its books the names of 168 applicants for aid. The total value of the employment secured during 1895–'96 was about $4,088, as against $3,000 the year previous.

The total number of situations placed at the disposal of the committee has been 133. Owing to unavoidable causes 29 of these could not be filled. These opportunities were scattered throughout an entire year. Large though the number is, says the report, still the listof applicants is far larger. The committee therefore takes occasion to bring the matter to the attention of the alumni and to ask them to write in case an opportunity in any of the above-mentioned or kindred lines, whereby a young man can aid himself, should come to their attention.

Through the efforts of the representative from the faculty of medicine, arrangements have been made whereby the chiefs of clinics in the Medical School have consented to receive at their offices, free of charge, any student of the university who is recommended to them for advice or treatment by the committee. This, says the report, has proved of great service, and assures the best medical skill in the city to those

of the students who need attention and who are cramped for means. Thirty men have profited by the arrangement during the past year.

Communications may be addressed to any member of the committee, but they will be most likely to meet with prompt attention if they are directed to the chairman (Professor J. F. Kemp) or to the clerk (Mr. Frederick M. Cutler). The office is at No. 54 East Forty-ninth Street, New York, room 2.

Some of the Uses of Resorcin in Dermatology.—The June number of the *Therapeutic Gazette* contains an article on this subject by Dr. M. B. Hartzell, who remarks that, although resorcin has been employed more or less in the treatment of cutaneous diseases for the past fifteen or twenty years, it occupies but a secondary place in dermatological therapeutics. Dr. Hartzell has had a large experience with it in skin diseases, and feels convinced that it is deserving of more frequent employment. He thinks that it may be a very useful remedy in a number of troublesome affections. It possesses, he says, keratoplastic and decided sedative properties. In the milder forms of eczema it often proves extremely serviceable in allaying the pruritus and diminishing hyperæmia; and in the oozing forms, when the inflammation is not too acute, it often exerts a favorable influence in diminishing the discharge and hastening the formation of cornified epithelium. In many cases of erythematous eczema the judicious use of this remedy alone will result in recovery. The best results are obtained, says Dr. Hartzell, when it is used in watery solutions, in the proportion of from ten to fifteen grains to an ounce of water, as it is rarely advisable to use stronger solutions; ointments also are apt to be irritating, and are not so useful as lotions. The addition of half of one per cent. of sodium chloride seems to increase the sedative effect of aqueous solutions, possibly, he says, by favoring absorption of the drug by the skin.

In the treatment of erythematous eczema, says the author the following lotion will be found useful:

Resorcin	from 10 to 15 grains;
Glycerin	10 minims;
Liquor calcis	1 fluid ounce.

This should be lightly dabbed, not rubbed, upon the affected parts for five minutes at a time, three or four times a day. In this way it usually stops the itching and burning and lessens the inflammation. The small quantity of glycerin is necessary to prevent the unpleasant drying which is apt to follow the use of all watery solutions. In moist oozing eczemas the addition of some insoluble powder—such as oxide of zinc, calamine, or subnitrate of bismuth—enhances its usefulness. In cases in which oozing is very abundant, subgallate of bismuth has seemed to be decidedly valuable when combined with the resorcin, as in the following:

℞	Resorcin	10 to 15 grains;
	Bismuth subgallate	30 "
	Glycerin	10 minims;
	Limewater	1 fl. ounce.

M.

Under the use of this lotion the moisture becomes less, the itching and burning subside, and desquamation shortly sets in. When the skin becomes dry and scaling, a paste of resorcin, like the subjoined, may be substituted for the lotion:

℞	Resorcin	15 grains;
	Powdered starch, Powdered zinc oxide, of each	2 drachms;
	Vaseline	½ ounce.

M.

This may be applied twice or three times a day. Owing to the fact that this paste turns blue some little time after it is applied to the skin, it is not suitable for use upon uncovered parts.

Notwithstanding its stimulating properties when used in sufficient strength, Dr. Hartzell states that he has not found resorcin of much service in old, thickened, squamous eczemas.

He has elsewhere called attention to the remarkable sedative effects exhibited by this drug in the treatment of painful ulcers of the leg which so frequently complicate varicose veins and eczema of the lower extremities, and he knows of no other remedy which is so useful in relieving the pain of these lesions, which is often excruciating. Used in an ointment of the strength of from five to twenty grains to the ounce, applied two or three times a day, it rarely fails to afford decided relief. Although it gives most gratifying results in the relief of the pain, it is less useful in promoting healing, being distinctly less valuable than many other remedies.

Resorcin is also of some value in the treatment of psoriasis, but it must be employed much stronger than is permissible in any of the forms of eczema. An ointment containing from thirty to forty grains to the ounce may be usefully employed upon uncovered parts where tar or chrysarobin are objectionable on account of the staining which they cause. Where the inflammatory symptoms are at all acute, ointments like the above must be used with some degree of caution, however, since they are capable of producing an undesirable amount of reaction.

In seborrhœa, particularly of the scalp, resorcin is one of our most useful remedies; as it is odorless and practically colorless, it makes an agreeable application to the scalp—much more so than sulphur, which is so frequently prescribed In the treatment of seborrhœa capitis, the following oil will be found to be an agreeable and efficient application:

℞	Resorcin	20 grains;
	Alcohol	2 fl. drachms;
	Yellow vaseline	6 drachms.

M.

A small quantity of this should be thoroughly rubbed into the scalp with the fingers or a small sponge every night at first, later every second night. It should not be prescribed, however, for those with very light hair, since it causes a slight but noticeable discoloration.

In acne an ointment of resorcin—twenty or thirty grains to the ounce—may be sometimes used with good effect, says Dr. Hartzell, but it is distinctly inferior to the preparations of sulphur; and it is not a trustworthy remedy, since it sometimes unexpectedly sets up quite a severe dermatitis when used upon the face.

In epithelioma resorcin sometimes acts in a remarkable way in promoting cicatrization. A mild and painless caustic, its destructive effects upon sound skin are quite superficial, but it acts with considerable energy upon epitheliomatous tissue. It is most useful in those flat, superficial, slowly spreading lesions seen so often upon the face, particularly upon the forehead. These will frequently heal up in the most surprising way under the prolonged use of a plaster like the following:

℞	Resorcin	72 grains;
	Yellow wax, Powdered rosin, of each	1½ drachm;
	Olive oil	q. s.

M.

This plaster may also be used with good results after the employment of more active caustics, such as pyrogallol, when the slough has separated, healing occurring rapidly under it.

In addition to its sedative and keratoplastic properties resorcin possesses considerable value as an antiparasitic. Ihle has found the following paste efficacious in the treatment of favus:

℞ Resorcin..... 1 to 1½ drachm;
Lanolin,
Vaseline,
Powdered zinc oxide,
Powdered starch, } of each.. 2 drachms.
M.

An ointment containing from thirty to forty grains to the ounce is serviceable in the treatment of the various forms of trichophytosis. Although it is not superior to other remedies of this class, says Dr. Hartzell, it has the advantage of being a cleanly application, far more so than sulphur and tar which are so commonly employed as antiparasitics. In tinea versicolor an alcoholic solution, from twenty to thirty grains to the ounce, may be painted over the affected area with a large camel-hair brush nightly, until free desquamation takes place. If the disease is not completely cured when desquamation is completed, the applications may be repeated a second or third time.

Boxwood as a Therapeutic Agent.—In an article on this subject in the *Journal des praticiens* for June 6th the writer says that boxwood has been employed for a long time in syphilis, herpes, and rheumatism. Chomel and Biett thought it was sudorific and narcotic, also antipyretic, which property, says the writer, seems to be the only one that can be attributed to it. Cazin, furthermore, demonstrated that the tincture of buxus and the sulphate of buxine possessed drastic properties. As an antipyretic, it has been employed by Pavia, Casati, and Bergaglia, who consider it as a useful substitute for quinine in the treatment of malarial intermittent fevers. Very recently, M. Artaud and M. Gadot have employed it successfully in certain forms of intermittent fever of hepatic origin. According to these authors, says the writer, boxwood is scarcely indicated except in febrile affections of the liver with hyperplasia and parenchymatous lesions, where it acts as a cholagogue. Its effects are especially pronounced in icterus and in fever.

The best preparation, says the writer, is the tincture of buxus, which may be employed as follows:

℞ Tincture of..... 30 grains;
Gum julep..... 3 ounces.
M.

This quantity, divided into four doses, may be taken during the twenty-four hours. The quantity may vary from thirty to sixty grains, but, as large doses have very marked drastic properties, it is better not to exceed thirty grains, or even less, if it is a question of combating simply fever. Powdered boxwood may also be given in doses of from fifteen to thirty grains, or the sulphate of buxine, but the posology of the latter is not yet sufficiently defined to allow of its employment without further research.

The Mitchell District Medical Society.—The forty-ninth semi-annual meeting will be held in Shelbyville, Ind., on June 29th and 30th, under the presidency of Dr. Edmund Andrews, of Chicago. The programme includes the following papers: The Diagnosis and Treatment of Acute Purulent Otitis Media, by Dr. J. A. Thompson, of Cincinnati; Influenza Otitis, by Dr. F. C. Heath, of Indianapolis; Serious Complications of Suppuration of the Middle Ear, by Dr. Max Thorner, of Cincinnati (to be discussed by Dr. A. E. Bulson, of Fort Wayne, Dr. J. O. Stillson, of Indianapolis, and Dr. R. C. Heflebower and Dr. S. C. Ayres, of Cincinnati); The Artificial Ripening of Cataract, by Dr. S. C. Ayres (to be discussed by Dr. Dudley S. Reynolds, of Louisville, and Dr. J. L. Masters of Indianapolis); The New Weapons in War, and their Effect on Military Surgery, by Dr. Edmund Andrews, of Chicago (to be discussed by Dr. A. C. Bernays, of St. Louis, and Dr. A. W. Brayton, of Indianapolis); The Surgery of the Gall Tract, by Dr. Charles A. L. Reed, of Cincinnati; A Report of a Case of Gallstones and Operation, with presentation of the patient, by Dr. Edwin Ricketts, of Cincinnati (to be discussed by Dr. L. S. McMurtry, of Louisville, and Dr. Joseph Ransohoff, of Cincinnati); The Necessity of Opening the Cranium after Injuries producing Coma or Convulsions, by Dr. W. B. Fletcher, of Indianapolis (to be discussed by Dr. Edmund Andrews, of Chicago, and Dr. Emory Lanphear, of St. Louis); Intestinal Anastomosis, by Dr. J. G. Sherrill, of Louisville (to be discussed by H. O. Pantzer, of Indianapolis, and Dr. Edwin Ricketts, of Cincinnati); The Radical Cure of Umbilical Hernia by Omphalectomy, by Dr. Joseph Ransohoff, of Cincinnati (to be discussed by Dr. William L. Rodman, of Louisville, and Dr. A. C. Bernays, of St. Louis); The Pathogenesis, Pathology, and Treatment of Gastric Catarrh, by Dr. J. M. G. Carter, of Waukegan, Ill. (to be discussed by Dr. Guido Bell, of Indianapolis, and Dr. M. F. Gerrish, of Seymour, Indiana); The Journal of the American Medical Association, by Dr. Joseph Eastman, of Indianapolis (to be discussed by Dr. I. N. Love, of St. Louis, Dr. Dudley S. Reynolds, of Louisville, and Dr. Thaddeus A. Reamy, of Cincinnati); The Uric-acid Diathesis (clinical), by Dr. R. Alexander Bates, of Louisville; A Report of a Case of the Removal of Four Calculi from the Urinary Bladder, by Dr. J. A. Sutcliffe, of Indianapolis (to be discussed by Dr. H. H. Grant, of Louisville, and Dr. Theodore Potter, of Indianapolis); Credulity and Skepticism in Medicine, by Dr. W. G. McFadden, of Shelbyville (to be discussed by Dr. Allison Maxwell, of Indianapolis, and Dr. J. C. Culbertson, of Cincinnati); The Definition of Vitality, by Dr. Guido Bell, of Indianapolis (to be discussed by Dr. Allen Pierson, of Spencer, Ind., and Dr. A. W. Brayton, of Indianapolis); Puerperal Eclampsia, by Dr. W. M. Catto, of Decatur, Ill. (to be discussed by Dr. John Moffett, of Rushville, Ind., and Dr. Thaddeus A. Reamy, of Cincinnati); The Value of Certain Therapeutics in Organic and functional Nervous Diseases, by Dr. Curran Pope, of Louisville (to be discussed by Dr. A. E. Sterne and Dr. W. B. Fletcher, of Indianapolis); A Plea for a Medical Certificate as one of the Requirements of Legal Marriage, by Dr. W. R. Allison, of Peoria, Ill. (to be discussed by Dr. J. C. Culbertson, of Cincinnati); Cerebral Arterio-sclerosis and it. Relation to Apoplexies, by Dr. Albert E. Sterne, of Indianapolis (to be discussed by Dr. W. B. Fletcher); What shall we do for Cancer of the Uterus? by Dr. Emory Lanphear, of St. Louis (to be discussed by Dr. J. C. Sexton, of Rushville, Ind., and Dr. Joseph Eastman, of Indianapolis); The Treatment of Inoperable Cases of Cancer and Sarcoma by Hypodermic Injections of Erysipelas and Prodigiosus Toxines, by Dr. Miles F. Porter, of Fort Wayne (to be discussed by Dr. Joseph Ransohoff and Dr. Theodore Potter); The Treatment of Typhoid Fever, by Dr. J. C. Culbertson, of Cincinnati (to be discussed by Dr. Guido Bell and Dr. Allison Maxwell, of Indianapolis); Some Obscure Affections of the Rectum, by Dr. J. M. Mathews, of Louisville (to be discussed by Dr. George J. Cook, of Indianapolis); Some Points in the Treatment of

Post-nasal Catarrh, by Dr. Gilbert I. Cullen, of Cincinnati (to be discussed by Dr. L. C. Cline, of Indianapolis, and Dr. J. A. Thompson, of Cincinnati); Some of my Mistakes in Surgery, by Dr. A. C. Bernays (to be discussed by Dr. J. H. Ford, of Wabash, Ind., and Dr. R. Harvey Reed, of Columbus, Ohio); The Surgery of the Chest, by Dr. B. Merrill Ricketts, of Cincinnati (to be discussed by Dr. W. V. Morgan, of Indianapolis, and Dr. A. C. Bernays); The Treatment of Diabetes Mellitus, by Dr. Allison Maxwell, of Indianapolis (to be discussed by Dr. A. J. Banker, of Columbus, Ind., and Dr. Theodore Potter); The Pathology and Treatment of Uterine Displacement, by Dr. F. C. Ferguson, of Indianapolis (to be discussed by Dr. Thaddeus A. Reamy, and Dr. W. H. Wathen, of Louisville); The Influence of Adenoids on the Growth and Development of Children, by Dr. L. C. Cline, of Indianapolis (to be discussed by Dr. Gilbert I. Cullen, and Dr. J. A. Thompson, of Cincinnati). Papers will also be read by Dr. R. C. Hefflebower, of Cincinnati, and Dr. L. S. McMurtry, of Louisville.

The Secretion of the Anal Glands of the Skunk.—The *Journal of Experimental Medicine* for April contains an article by Thomas B. Aldrich, Ph. D., who deals with the chemical study of this secretion and its physiological properties. The author gives a brief description of the anal glands, or pouches, in which is secreted the fluid which emits the offensive odor. They are situated, he says, on either side of the rectum close to the anus. They are oval in shape, the longer diameter from an inch to an inch and a half, surrounded by a muscular envelope and opening into the rectum just inside the sphincter by single ducts which terminate at the top of prominent nipplelike papillæ. The papillæ are situated at the bottom of recesses, and when not protruded are nearly concealed from view by folds of the mucous membrane. By gentle pressure the fluid in the sac may be forced out through the duct in a very fine stream.

There is still prevalent, says the author, an erroneous idea that the secretion is identical with the urine or is in some way connected with it. That there is no connection whatever between the sacs and the genito-urinary passages has been shown by Wyman and Chatin.

The exceedingly disagreeable odor possessed by the secretion of the *Mephitinæ*, and the difficulty attending its collection in sufficient quantity for an exhaustive study, have deterred investigators in the past from studying this most singular and interesting fluid.

If one was bold enough to start the investigation, objections were invariably raised, and thus all further research was stopped. At least this was Loew's experience, who says: "On an expedition through Texas in 1872 I had frequent opportunity to collect a sufficient quantity of this secretion to establish its chemical constitution, but all my companions protested against it, declaring the odor which clung to me to be unbearable. On my return to New York city I started a few chemical tests, with the little I had collected, when the whole college rose in revolt, shouting, 'A skunk, a skunk is here!' I had to abandon the investigation." This, no doubt, says Mr. Aldrich, has been the experience of others who have attempted to study either the secretion or the glands. He has been more fortunate than his predecessors in being surrounded by those who, for the cause of science, would endure even the odor of a skunk in close proximity. Had it not been for this forbearance on their part, he says, he should undoubtedly have suffered the fate of others.

When obtained from the sacs a few hours after the death of the animal, the secretion is a clear, limpid fluid, of a golden yellow or light amber color, of a characteristic, penetrating, and most powerful odor, and having a specific gravity, at ordinary temperature, less than water (0·939).

The fluid filters readily, sometimes shows a decided greenish cast, and in the evening is said to be slightly luminous; but the author states that he has not been able to verify the last observation. After removal from the sac it turns gradually darker in color, probably on account of a slight oxidation.

There is generally present in the sacs to the extent of one gramme or more a yellowish amorphous body, having, as far as he has tested, an alkaline reaction, and giving the proteid tests. Mr. Aldrich takes this substance to consist in large part of the *débris* of desquamated epithelial cells from the inner surface of the sac. Whether any chemical function is to be ascribed to this *débris* he has not yet been able to determine. Prismatic crystals have been observed when a little of the fluid has remained some time in contact with the amorphous body referred to. The secretion standing in a bottle often deposits a white flocculent substance.

It is hardly necessary to say, continues Mr. Aldrich, that the odor of the secretion is exceedingly persistent, diffusible, and penetrating.

The essential principle in the secretion has been attributed to various substances, allyl sulphide and the lower mercaptans being the ones usually suspected.

The substance is a powerful anæsthetic, and has also been used as an antispasmodic. When inhaled without the admixture of a large amount of air the victim loses consciousness, the temperature falls, the pulse slackens, and, if the inhalation were prolonged, the results would doubtless prove fatal.

When recently ejected, the fumes from this liquid are overpoweringly pungent and extremely irritating to the air-passages, and are said to be capable of producing œdema of the glottis. It is also said to be an efficacious remedy in certain spasmodic affections of the air-passages. If any of this fluid finds its way into the eye it produces intense pain and sets up acute conjunctivitis, which commonly runs its course in a week or ten days. Moreover, there are reliable accounts of the entire loss of vision from this cause.

Swarts complained while working with the secretion, especially when distilling with water vapor, of violent headaches and dysuria. His urine was voided with a burning sensation, and deposited a brown sediment which smelled like musk, as did also the urine. His perspiration for several days retained the odor of the secretion. Though the author has worked with comparatively large quantities of the secretion and during a period of three months, he states that he has failed to observe in himself the symptoms described by Swarts.

The secretion of *Mephitis mephitica* is remarkable not only for the quantity (about thirty per cent.) of sulphur which it contains, and for this sulphur being in an unoxidized condition, but for the light it throws on the normal sulphur metabolism of the animal organism.

The Craving for Salt.—In the *Lancet* for June 6th the Paris correspondent writes that this subject was discussed at a recent meeting of the Société de biologie. M. Lapicque stated that sodium chloride was consumed as an article of necessity by nearly all races, and that most of the lower animals were fond of it, although there were exceptions to the rule. The herbivora betrayed a greater liking for the salt than the carnivora, and in the same way agricultural populations, who were more or less vegetarians, were invariably large consumers of it. The tribes who ate no salt led a pastoral or nomadic existence, whose regimen was almost exclu-

sively animal. This, said the writer, had led Bunge to formulate the theory that as vegetables contained principally potassium salts, these latter replaced the sodium salts in the economy, and the vegetarian instinctively craved for common salt in order to compensate for its loss through the kidneys. This theory was, however, weak, for it did not explain why certain peoples who had not access to sea salt replaced it by salts of potassium obtained by the incineration of plants. Such a people were the negro inhabitants (a million) of the French Congo between Lake Sangha and Lake Tchad. Salt was unknown in this vast territory, which was as large as France; for it was substituted an artificial salt extracted from a certain number of selected plants, whose ashes were washed and their potassium salts crystallized out. Samples of the salt had been analyzed and found to be composed of potassium salts only. When on their first entrance into the country the French had endeavored to sell common salt they found it unsalable, the natives preferring their own. This disposed of the theory propounded by Bunge, and, the writer thought, weakened another theory advanced by Ringer and others, who maintained that potassium salts had the property of a protoplasmic poison and cardiac depressant. M. Lapicque inclined to the belief that salt was of use only in procuring for man and animals a gustatory stimulus. M. Trouessart stated that dearth of salt in besieged cities had been made up by the use of saltpetre. M. Giard told his colleagues the story of the chimpanzee of the London Zoological Gardens which, deprived of salt, had taken to drinking its own urine. As soon as it had been provided with a block of bay salt it had ceased to drink its urine, and used to sleep with the salt held tightly in its arms. According to M. Samson, oxen and sheep would, on large farms, abstain for weeks together from the salt placed within their reach, whereas at certain other periods they ate largely of it. This variability of appetite for salt was due to the variation, according to the season of the year, of their diet.

The Harlem Hospital.—We learn that an appointment as consulting surgeon has been offered to Dr. Thomas H. Manley, and that he has declined to accept it.

Harvard University and the Harvard Medical College of Chicago.—On June 13th a suit in equity was begun in the United States District Court for the Northern District of Illinois, entitled the President and Fellows of Harvard College *vs.* The Harvard Medical College of Chicago, in which it is sought to enjoin the Chicago school from using the name "Harvard" as being a fraud upon Harvard University and the public. The obvious ground of such a suit is that confusion is likely to arise in the minds of laymen from the use of the distinctive name of an old and famous institution by a ew college.

Somatose as a Galactagogue.—In the *Centralblatt für innere Medicin* for June 6th Dr. Richard Drews, of Hamburg, gives accounts of a number of cases in which he gave somatose with the result of increasing the mammary secretion or of setting it up where it failed to appear spontaneously. He concludes that somatose exerts a specific action on the breasts of nursing women, not only causing an abundant flow of milk, but also overcoming the difficulties attendant upon the establishment of lactation. He urges, therefore, that in all cases in which an abundant secretion of milk does not take place, or in which it shows a tendency to cease too early, somatose be employed instead of giving the child over to the dangers of artificial feeding, provided, of course, the breasts are well developed and no morbid condition forbids the mother to nurse her child. The proper dose of somatose for this purpose is a teaspoonful, three or four times a day, in a cup of warm milk, soup, cocoa, or the like. Owing to its almost complete tastelessness, somatose is nearly always well borne, even for long periods.

Abortion from the Use of Guaiacol.—Dr. J. Petrasko (*Pester medicinisch-chirurgische Presse*, 1896, No. 5; *Centralblatt für innere Medicin*, June 6, 1896) reports the case of a woman, twenty-nine years old, three months pregnant, who had an infiltration of the apex of the left lung, for which she was given infusion of senega, also three quarters of a grain of pure guaiacol every morning and noon. On the eighth day, when she had received, in all, twelve grains of guaiacol, abortion took place, and it could not be otherwise accounted for than as having been due to the drug. It is remarked that phenol and its derivatives exert a paralyzing action on the vaso-motor centres, so that they may produce abortion by causing defective nutrition of the fœtus. It is added that the patient was of a nervous nature and may have had an idiosyncrasy for guaiacol.

The Treatment of Eczema of the Vulva.—Lusch (*Union méd.; Rev. de thérap.; Ctrlbl. f. d. ges. Therap.*) recommends bathing the parts morning and evening with the following solution, warm:

℞ Tincture of opium, Sodium bicarbonate,	each.....	8 parts;
Potassium bicarbonate.....		4 "
Glycerin		6 "
Distilled water.....		260 "

M.

The bathing is to be followed by dusting on a mixture of forty-nine parts of starch and one part of powdered camphor.

An Application for Intertrigo.—In the June number of the *Centralblatt für die gesammte Therapie* the following formula is given:

℞ Europhene, Anhydrous lanolin,	each.....	5 parts;
Powdered talc.....		90 "

M. S.: For external use.

Formalin in the Treatment of Eczema.—At the Twenty-third Congress of the German Surgical Society, Dr. Rotter (*Jahrb. f. prakt. Med.*, 1895; *Mntsh. f. prakt. Dermat.*, June, 1896) presented the following formula:

℞ Formalin.....		1 part;
Zinc oxide, Talc,	each	100 parts;
Vaseline.....		200 "

M.

The Treatment of Whooping-cough in Adults.—The *Centralblatt für die gesammte Therapie* for June quotes the following formula from the *Semaine médicale*, in which it is attributed to Bancock:

℞ Bromoform.....	15 parts;
Tincture of gelsemium	16 "
Syrup of lactucarium.....	120 "
Powdered gum arabic.....	a sufficiency.

M. S.: Three or four teaspoonfuls to be taken in the course of a day.

Iodol and Calomel in the Treatment of Chancre.—Dr. Majocchi (*Semaine méd.; Ctrlbl. f. d. ges. Therap.*, June, 1896) recommends the application of equal parts of iodol and calomel to chancres after they have been carefully cleansed and disinfected.

INDEX TO VOLUME LXIII.

PAGE

Abdomen, A Case of Goring of the, by an Elephant's Tusk ... 95
Abdominal Section performed on an Infant ... 717
Abdominal Section performed Successfully on an Infant ... 387
Abrams, A. Heretofore Undescribed Neuroses of the Lungs ... 767
Abscess of Chronic Tuberculous Disease of the Joints, On the Question of Non-interference in ... 265
Abscess of the Uterus ... 100
Abscess simulating Empyema, A Subdiaphragmatic ... 297
Abscess, The Acute Retropharyngeal, of Infancy and Childhood ... 440
Abscess, The Causation and Treatment of Mammary ... 686
Abscess, The Management of Cases after Recovery from Appendicular, in which the Appendix was not Removed ... 230
Abscess, The Treatment of, by the Otis Method. 776
Abscesses of the Auditory Canal, The Treatment of ... 724
Academy of Medicine and Surgery, The Richmond ... 153
Academy of Medicine, The American ... 436
Academy of Medicine, The, and the Minor Hospitals ... 121, 155
Academy of Medicine, The Buffalo ... 503, 585, 615, 652, 680, 714, 760, 792, 8 1
Academy of Medicine, The New York ... 28, 100, 194, 264, 330, 331, 399, 468, 519, 614, 631, 696, 748
Academy of Medicine, The Obstetrical Section of the New York ... 180
Academy of Medicine, The Section in Genito-urinary Surgery of the New York ... 109
Academy of Medicine's Library, The Chamber of Commerce and the ... 420
Acetanilide as an Antipyretic ... 663
Acetanilide, The Toxic Effects of Topical Applications of ... 63
Acne, The Topical Treatment of ... 401, 423
Acromegaly ... 124
Acromegaly, Hypertrophic Pulmonary Osteoarthropathy and ... 33
Acromegaly with Ocular Complications ... 621
Act, A Graceful ... 680
Add son's Disease, A Rare Case of ... 663
Address, Changes of ... 18, 88, 287, 386, 483, 520, 553, 615, 652, 683, 714, 750, 780, 811
Addresses, Physicians' Summer ... 615, 683, 714
Adeps Lanæ ... 131
Adler, I. The Diagnosis of Malignant Tumors of the Lungs ... 173, 204
Advancement of the Ocular Muscles, A New Method of Tying the Sutures in ... 619
Advancement of the Recti Muscles, A New Operation for the ... 620
Advancement of a Rectus Muscle, An Operation for the ... 620
Airol, a New Substitute for Iodoform ... 196
Albuminuria as a Result of Vaccination ... 296
Albuminuria, Strontium Salts in the Treatment of ... 130
Alcohol as an Antipyretic ... 633
Alcoholism and Public Health ... 253
Alcoholism, Report of a Case of Chronic, treated Empirically ... 281
Alexander, S. Prostatectomy ... 171
Aloes, Tincture of, in the Treatment of Varicose Ulcers ... 532
Ambler, C. P. Prophylaxis in Tuberculosis ... 18
American Book, A German Estimate of an ... 588
American Practice, Foreign Aspirants to ... 728
Ammonol ... 468
Amputation, "Discordant," Subtrochanteric ... 332
Amygdalotomy, The Dangers of ... 55
Anæmia, Protonuclein in the Treatment of ... 758
Anæmia, Sulphate of Zinc in the Treatment of. 532
Anæmia, The Subcutaneous Use of Iodine and Iron in Grave ... 529
Anæmia ? Will Iron Cure ... 515
Anæsthesia, Recent Advances in the Methods of Local ... 258
Anastomosis, Complications in Abdominal Surgery requiring Intestinal, etc ... 289
Anatomical Material, The Supply and Preservation of ... 156
Anatomical Peculiarities, Racial ... 500
Angina Pectoris, The Nature, the Cause, and the Treatment of ... 292
Anorexia, Morphine in the Treatment of Hysterical ... 395
Anosmia, The Employment of Carbonic Acid in the Treatment of ... 820
Antiphthisin, A Report on ... 532
Antipyonine and its Therapeutic Application ... 624
Antipyretics, Quinine, Salicylic Acid, Antipyrine, Acetanilide, Phenacetine, Thalline, and Alcohol as ... 663
Antipyrine as an Antipyretic ... 663
Antipyrine in the Treatment of Measles ... 192
Antipyrine, Salol and, in the Treatment of Uterine Hæmorrhage ... 468
Antiseptic, Xeroform, another New ... 630
Antiseptics in the Treatment of Infantile Diarrhœa ... 58
Antisyphilitic Treatment, The Question of the Duration of ... 248
Antitoxine, A Year's Experience in the Use of, in Private Practice ... 514

PAGE

Antitoxine in Diphtheria, Observations of ... 217
Antitoxine Injections, The Cause of Sudden Death after ... 708
Antitoxine or Serum Therapy ... 592
Antitoxine, Practical Experiences with ... 601
Antitoxine, Septicæmia following Diphtheria; Treatment by Streptococcus ... 243
Antitoxine, Tetanus ... 721
Antitoxine, The American Pædiatric Society's Collective Investigation of ... 589
Antitoxine, The New York Health Department's Diphtheria ... 248
Antitoxines, A Report from the Laboratory of the New York Pasteur Institute on ... 560
Antivenene, The Treatment of Snake-bite with. 628
Antivivisection Bill, The Congressional ... 840
Anus, Itching of the ... 592
Apenta Water ... 399, 632
Aphasia, A Case of Amnesic ... 229
Apothecaries, A Warning to ... 784
Appendectomies, Report of Fifty ... 187
Appendicitis ... 121
Appendicitis, Hereditary ... 135
Appendicitis, Some Practical Reasons for Early Operation in ... 525
Appendicitis, Some Remarks on a Year's Work in ... 640
Appendicitis, The Treatment of Chronic ... 664
Appendicitis, Recurrent Obliterative ... 380, 391
Appendix, Experimental Inflammation of the Vermiform ... 351
Arecolin, A New Meiotic ... 624
Argonin in the Treatment of Gonorrhœa ... 97
Aristol, Forty Clinical Observations on the Therapeutic Value of ... 823

ARMY, CHANGES OF MEDICAL OFFICERS OF THE:

Appel, Aaron H ... 615
Brooke, Benjamin ... 454, 589, 783
Cabell, Julian M ... 615
Caldwell, Daniel G ... 488, 683
Carter, W. Fitzhugh ... 845
Corson, Joseph K ... 396
Edie, Guy L ... 615
Ewen, Clarence ... 88
Fauntleroy, Powell C ... 336, 589
Fisher, Henry C ... 454
Flagg, Charles E. B ... 287
Girard, Joseph B ... 287
Gleman, James D ... 120
Greenleaf, Charles R ... 451
Hallock, Harry M ... 182
Heyl, Ashton B ... 520, 589, 783
Ireland, Merritte W ... 454, 683
Ives, Francis J ... 188
Jarvis, Nathan S ... 520
Johnson, Richard W ... 783
Kennedy, James M ... 120, 683
Kirkpatrick, Thomas J ... 396
La Garde, Louis A ... 783
Lippitt, William F., Jr ... 454, 683
Macauley, C. N. Berkeley ... 287
Mason, Charles F ... 454
Munday, Benjamin ... 182, 386, 520
Munn, Curtis E ... 88
Neugarden, George J ... 520, 615
Owen, William O., Jr ... 209
Penley, H. O ... 683
Polhemus, Adrian S ... 488
Price, Curtis E ... 451
Quinton, William W ... 287
Rand, Irving G ... 386
Raymond, Thomas U ... 783
Shaw, Henry A ... 589
Shillock, Paul ... 520
Snyder, Henry B ... 287
Stone, John H ... 386
Straub, Paul F ... 287
Ten Eyck, Benjamin L ... 182
Wales, Philip G ... 488, 811
Ware, Isaac P ... 580
Waters, William E ... 783
Wells, George M ... 454, 683
White, Robert H ... 287, 386
Wilson, James Sprigg ... 88, 386, 589
Wilson, William H ... 182
Woodruff, Charles E ... 683
Worthington, James C ... 53

Army, Vacancies in the Medical Corps of the ... 759
Aronson, E. Foreign Bodies in the Rectum ... 180
Aronson, E. The Relation of Parotiditis to Orchitis ... 680
Arsenical Poisoning, The Anatomical Changes in ... 746
Arthritis, Chronic Rheumatic ... 437
Ashton, W. E. The Treatment of Fibroid Tumors of the Uterus ... 145
Asphyxia from Fæcal Vomiting during the Administration of Ether ... 377, 390
Association, Excursions for Members of the American Medical ... 589
Association of Genito-urinary Surgeons, The American ... 719, 750
Association of Greater New York, The Albany Medical College Alumni ... 52
Association of Railway Surgeons, A Proposed ... 200
Association, The American Climatological. 436, 627
Association, The American Laryngological ... 553
Association, The American Medical ... 331, 571
Association, The American Neurological ... 659
Association, The American Orthopædic ... 561, 714, 756
Association, The Florida Medical ... 598

PAGE

Association, The French, for the Advancement of the Sciences ... 196
Association, The Kings County, N. Y., Medical 182
Association, The Long Island, of the Alumni of Columbia University Medical Department ... 184
Association, The New York Physicians' Mutual Aid ... 386
Association, The New York State Medical ... 120
Association, The, of Alumni of St. Mary's Hospital ... 589
Association, The, of American Medical Colleges 535
Association, The, of Military Surgeons of the United States ... 498
Association, The, of the Alumni of the New York Hospital ... 589
Association, The Semicentennial of the American Medical ... 568
Association, The Texas State Medical ... 564
Association, The New York State Medical ... 693
Association, The Ontario Medical ... 721

ASSOCIATIONS, MEETINGS OF. See SOCIETIES.

Asthma, Paraldehyde in ... 504, 591
Astigmatism, Alleged Action of the Oblique Muscles in Oblique ... 623
Astigmatism in the Genesis of Cataract, The Rôle of ... 495
Asylum, The Hebrew Sheltering Guardian Society Orphan ... 568
Atlanta, The Journey to ... 552
Atrophy, A Case of Progressive Muscular, of Sudden Onset ... 740
Atrophy, The Development of Muscular, on a Basis of Old Infantile Spinal Paralysis, a Favorable Type ... 426
Atropine, On the Indications for the Use of, in the Eyes ... 209
Auzal, E. W. A Case of Acute Bulbar Paralysis ... 311
Axtell, E. R. Chronic Rheumatic Arthritis ... 437

Bacillus Pyogenes Filiformis ... 127
Bacteria in Oysters ... 725
Bacterial Media, A Machine for Tubing ... 657
Baker, F. The Nomenclature of Nerve-cells ... 373
Barrister. Letter to the Editor ... 387
Barry, J. H. Some Observations on Obstetric Cases ... 607
Baths, The Riverside ... 588
Bates, W. H. The Use of Extract of Suprarenal Capsule in the Eye ... 647
Bellamy, R. Recurrent Obliterative Appendicitis, etc ... 380, 391
Bemus, M. N. A Peculiar Case of Strangulated Umbilical Hernia ... 280
Benzosol, The Therapeutic Value of ... 397
Bicycle-riding upon Improperly Fitting Saddles as an Ætiological Factor in Prostatitis and Stricture of the Urethra ... 243
Bicycling. A Discussion on ... 232
Bicyclists, Ophthalmic Troubles in ... 31
Bile in the Peritoneal Cavity ... 124
Billings, J. S., and Fletcher, R. Letter to the Editor ... 155

BIRTHS IN THE FAMILIES OF PHYSICIANS:

Campbell, P. C ... 387
Ferguson, F ... 653
Moll, L. Arthur ... 489
Perry, O. L ... 616
Peterson, Frederick ... 387
Wessinger, J. A ... 554

Bishop, L. F. Control of Epilepsy by Bromides. 779
Bismuth, Soluble Phosphate of ... 262
Bismuth Subnitrate, Enormous Doses of ... 32
Bleeding in some Cases of Meningitis ... 353
Bleyer, J. M. Crookes's "X" and other Light Rays ... 245
Bleyer, J. M. Letter to the Editor ... 521
Bleyer, J. M. New Rays of Röntgen, the New Photography, and the Photo-fluoroscope ... 737
Blindness, The Law for the Prevention of ... 184
Blisters, The Rise and Fall of the Use of ... 821
Blood in an Animal, A Method of Discovering ... 79
Blood-maker, Food *versus* Medicine, as a ... 212
Board of Health, The New York City ... 356
Boasting, Journalistic ... 194
Bodenhamer, W. The Hæmorrhoidal Flux, etc. 544
Bolton, P. R. Cases of Loose Body of the Knee 830
Bones of the Wrist and Hand, A Röntgen Picture of the ... 516

BOOK NOTICES:

Abbott, A. C. The Principles of Bacteriology ... 158
Allis, O. H. An Inquiry into the Difficulties encountered in the Reduction of Dislocations of the Hip ... 684
Ashby, H. A., and Wright, G. A. The Diseases of Children ... 255
Auvard, Dr. De la stérilité chez la femme ... 291
Besnier, E., *et als.* A Pictorial Atlas of Skin Diseases and Syphilitic Affections. 227, 492, 593
Black, D. C. The Urine in Health and Disease ... 92
Boisliniere, L. Ch. Obstetric Accidents, Emergencies, and Operations ... 753
Bourneville. Assistance, traitement et éducation des enfants idiots et dégénérés ... 493
Bracken, H. M. Outlines of Materia Medica and Pharmacology ... 189
Broca, A. Les suppurations de l'apophyse mastoïde ... 255
Brothers, A. Infantile Mortality during Childbirth and its Prevention ... 559

PAGE

Book Notices:
Browne, L. Diphtheria and its Associates... 526
Buret, F. Syphilis in the Middle Ages and in Modern Times... 127
Burnett, C. H. An American Text-book of Surgery... 188
Cameron, J. C., and others. An American Text-book of Obstetrics... 91
Carter, J. M. G. Catarrhal Diseases of the Respiratory Passages... 92
Chapman, H. C. A Manual of Medical Jurisprudence and Toxicology... 426
Charcot, J. B. Contribution à l'étude de l'atrophie musculaire progressive... 527
Claiborne, J. H., Jr. The Functional Examination of the Eye... 325
Crocker, H. R. Atlas of the Diseases of the Skin... 847
Curtis, H. H. Voice Building and Tone Placing... 625
Dantec, F. Le. La matérie vivante... 364
Dennis, F. S. System of Surgery... 253
Dercum, F. X. A Text-book on Nervous Diseases... 361
Donaldson, H. H. The Growth of the Brain. 527
Duhring, L. A. Cutaneous Medicine... 57
Eccles, A. S. The Practice of Massage... 91
Fort, J. A. Traitement des rétrécissements par l'électrolyse linéaire... 325
Foster, M. A. A Text-book of Physiology... 58
Fuller, E. Disorders of the Male Sexual Organs... 126
Fullerton, A. M. A Handbook of Obstetric Nursing... 257
Gant, S. G. Diagnosis and Treatment of Diseases of the Rectum, Anus, and Contiguous Textures... 685
Gillies, H. C. The Theory and Practice of Counter-irritation... 227
Grandin, E. H. Pregnancy, Labor, and the Puerperal State... 254
Gray, L. C. A Treatise on Nervous and Mental Diseases... 262
Haab, O. An Atlas of Ophthalmoscopy. ... 491
Haig, A. Uric Acid as a Factor in the Causation of Disease... 527
Hammond, W. A. Cerebral Hyperæmia... 190
Hart, Mrs. E. Diet in Sickness and Health.. 255
Hayem, G. Physical and Natural Therapeutics... 392
Helfrich, H. Atlas of Traumatic Fractures and Luxations... 427
Hering, E. On Memory and the Specific Energies of the Nervous System... 427
Hoag, E. B. Elementary Technique in Histology and Bacteriology... 459
Houston, E. J. Electricity in Electro-therapeutics... 558
Impey, S. P. A Handbook of Leprosy... 685
Ingraham, C. W. Don'ts for Consumptives.. 754
Jacob, C. An Atlas of the Normal and Pathological Systems... 491
Jacobi, A. Therapeutics of Infancy and Childhood... 593
Jennings, J. E. Color-vision and Color-blindness... 363
Jewett, C. Manual of Childbed Nursing... 257
Knopf, S. A. Les Sanatoria... 428
Lang, A. Text-book of Comparative Anatomy 847
Lang, W. The Methodical Examination of the Eye... 717
Lillard, J. F. B. The Medical Muse: Grave and Gay... 190
Lindley, F. M. Health in the Home... 559
Lindsay, R. An Essay on Malaria and its Consequences... 188
Lockwood, G. R. A Manual of the Practice of Medicine... 157
Long, J. H. An Elementary Course in Experimental and Analytical Chemistry... 92
Love, J. K. Deaf-mutism... 489
Luff, A. P. Text-book of Forensic Medicine and Toxicology... 426
Mandel, J. A. Handbook for the Bio-chemical Laboratory... 528
Martin, S. Functional and Organic Diseases of the Stomach... 157
McFarland, J. A Text-book upon the Pathogenic Bacteria... 459
Medical and Surgical Report of the Children's Hospital, Boston... 56
Monro, T. K. A History of the Chronic Degenerative Diseases of the Central Nervous System... 364
Morris, H. Injuries and Diseases of the Genital and Urinary Organs... 753
Morris, R. T. Lectures on Appendicitis... 126
Mosso, A. Fear... 718
Moulin, G. W. M. Surgery... 189
Munk, W. The Life of Sir Henry Halford... 392
Neale, R. Appendix to the Medical Digest... 190
Neale, R. The Medical Digest... 190
Neiswanger, C. S. Electro-therapeutical Practice... 255
Neumeister, R. Lehrbuch der physiologischen Chemie... 158
Parkes, C. T. Clinical Lectures on Abdominal Surgery... 684
Pedley, R. D. The Diseases of Children's Teeth... 459
Phillips, R. J. Spectacles and Eyeglasses.... 257
Playter, E. Consumption... 754
Purdy, C. W. Practical Uranalysis and Urinary Diagnosis... 57

PAGE

Book Notices:
Rachford, B. K. Some Physiological Factors of the Neuroses of Childhood... 527
Report of the Commissioner of Education.... 190
Report on the Scientific Study of the Mental and Psychical Conditions of Childhood.... 428
Ribot, Th. The Psychology of Attention.... 717
Roberts, C. The Medical Inspection of and Physical Education in Schools... 754
Roberts, J. B. Modern Medicine and Homœopathy... 256
Rotch, T. M. Pædiatrics... 592
Rusby, H. H. Essentials of Vegetable Pharmacognosy... 158
Savage, G. C. New Truths in Ophthalmology. 528
Schweinitz, G. E. de. The Toxic Amblyopias 490
Scoville, W. L. The Art of Compounding... 291
Senn, N. Principles of Surgery... 391
Senn, N. The Pathology and Surgical Treatment of Tumors... 391
Shibata, K. Obstetrical Pocket Phantom.... 257
Shoemaker, J. V. A Practical Treatise on Materia Medica and Therapeutics... 92
Shuttleworth, G. E. Mentally Deficient Children... 489
Smith, J. L. A Treatise on the Medical and Surgical Diseases of Infancy and Childhood. 593
Snow, H. The Conditions of Radical Cure of Cancer, etc... 255
Stephenson, S. Epidemic Ophthalmia... 362
Stewart, G. N. A Manual of Physiology... 290
Stimson, L. A. A Manual of Operative Surgery... 188
Stirling, W. Outlines of Practical Physiology 58
Taylor, R. W. The Pathology and Treatment of Venereal Diseases... 458
The American Year-book of Medicine and Surgery... 223
The International Medical Annual... 559
The Johns Hopkins Hospital Reports. Vol. V. 754
The Middlesex Hospital... 256
The Value of Family History and Personal Condition in Estimating a Liability to Consumption... 189
The Year-book of Treatment for 1896... 393
Thoma, R. Text-book of General Pathology and Pathological Anatomy... 624
Transactions of the American Gynæcological Society... 188
Transactions of the American Microscopical Society... 428
Transactions of the American Otological Society... 93
Transactions of the First Pan-American Medical Congress... 558
Treves, F. A System of Surgery... 125
Tyson, J. A Guide to the Practical Examination of Urine... 58
Unna, P. G. The Histopathology of the Diseases of the Skin... 717
Van Niessen. Der Syphilisbacillus... 189
Vulté, H. T., and Neustadt, G. M. S. Laboratory Manual of Inorganic Preparations... 291
Walker, G. A. Students' Aid in Ophthalmology... 393
Wassermann, M. Épithélioma primitif de l'urèthre... 427
Williams, J. W. The Johns Hopkins Hospital Reports... 363
Woolsey, A. H. Handbook for Hospitals.... 158
Zwaardemaker, H. Der Physiologie des Geruchs... 158
Books, The Transmission of Microbian Diseases by... 298
Boxwood as a Therapeutic Agent... 854
Bracken, H. M. Letter to the Editor... 251
Bracken, H. M. The Study of Materia Medica and Therapeutics... 576
Bratton, W. D. The Arid-region Sanitarium for Tuberculous Patients of the Marine-Hospital Service... 3
Breast, The Surgical Treatment of Malignant Disease of the... 60
Breasts, Supernumerary... 232
Bremer, L. An Improved Method of Diagnosticating Diabetes from a Drop of Blood... 301
Brewer, G. E. Operative Surgery at the City Hospital, etc... 569
Brickner, S. M. A Uterine and Rectal Endoscope... 755
Bromides, Control of Epilepsy by... 779
Bromoform in the Treatment of Whooping-cough... 691
Bronchitis in very Young Children, The Prophylaxis and Treatment of... 530
Bronchitis, Some Points in the Pathology and Treatment of Acute... 634
Broncho-pneumonia in very Young Children, The Prophylaxis and Treatment of... 530
Bronson, E. B. The Topical Treatment of Acne... 401, 423
Brown, W. S. See Hamilton, A. McL... 448
Bull, C. S. Reports on Ophthalmology.... 493, 618
Bulletin, The, of the Johns Hopkins Hospital.. 519
Burns, An Ointment for... 131
Burns, Ichthyol in the Treatment of... 31
Burns of the Eyelids, The Treatment of... 162
Burns, Picric Acid in the Treatment of... 120
Burns, Potassium Nitrate in the Treatment of.. 368
Burns, The Treatment of... 367

Cabinet, An Electro-therapeutical... 594
Cæsarean Operation, The, performed Successfully Three Times on the Same Woman.... 782

PAGE

Cæsarean Section, The Technique of the Improved... 290
Cancer and Cysts of the Breast, The Diagnosis and Treatment of Early... 29
Cancer, Erysipelas Serum in the Treatment of.. 691
Cancer Institutions, The Treatment of Malignant Disease in So called... 253
Cancer? Is Surgery a Cure for... 294
Cancer of the Uterus, Calcium Carbide in the Treatment of... 627
Cancer of the Uterus complicated by Pregnancy. 522
Cancer, The Results of Hysterectomy for... 262
Cancers and Tumors, The Present State of our Knowledge of... 23
Canfield, H. "Only Nervousness"... 44
Cannabis Indica, A New Preparation of... 399
Cantharidin... 366
Cantharidin as an Adjunct to Mercury... 164
Cantrell, J. A. A Cutaneous Outbreak Presumably due to the Ingestion of Acetate of Potassium... 381
Carbolic Acid, Vinegar as an Antidote to.... 760
Carbonic Acid, The Influence of, on the Sexual Organs... 664
Carbuncle... 582
Carcinoma Mammæ, Removal of a, etc... 214
Carcinoma, The Treatment of Mammary... 846
Cardiac Disease during Pregnancy and Labor.. 77
Cardiac Murmurs, Inorganic, in Children... 96
Cardiac Troubles due to Thoracic Deformity... 96
Carstens, J. H. Some Remarks upon a Year's Work in Appendicitis... 640
Cartilages, Separation of the Nasal... 213
Castration, Vaginal... 22
Casualties, Football... 283
Cataract, The Ripening of Immature, by Direct Trituration... 495
Cataractous Family, A... 181, 289
Catheterism of the Ureters in the Male and in the Female, etc... 369
Catheterism, Ureteral... 541
Celebration, The Jenner Centennial... 614
Cerumen, How to remove... 331
Cervix Uteri, Excision of the... 606
Chancre, Extragenital... 751
Chancre, Iodol and Calomel in the Treatment of 856
Chancre, The Treatment of Soft... 231
Chancres found in Unusual Localities... 638
Chapin, H. D., and Morton, W. J. A Röntgen Picture of a Marasmic Infant... 540
Chapped Hands, An Ointment for... 468
Chappell, W. F. A New Semifluid Product, Oleo-stearate of Zinc... 711
Chappell, W. F. Report of Three Cases of Xerostomia, or Dry Mouth... 277
Chappell, W. F. The Creosote Treatment of Tuberculosis of the Upper Air-passages... 604
Charcoal. A Dressing of, made from Rice Straw 600
Charcoal as a Therapeutic Agent... 463
Chilblains, The Treatment of... 96
Childhood, The Acute Retropharyngeal Abscess of Infancy and... 440
Children, Digitalis Poisoning in... 170
Chittenden, R. H. Some Facts concerning Nucleins... 480
Chocolate Plant, The... 750
Choked Disc, Pathological Anatomy and Pathogenesis of the So-called... 620
Chorea, Congenital... 350
Chorea, The Treatment of Simple... 820
Ciliary Muscle, The History of the... 157
Cirrhosis of the Liver... 361
Civilization, The Duty of the Medical Profession to, and to Science... 156
Cleanliness, Surgical... 729
Clements, J. The Absorptive Power of the Large Intestine... 517
Clinic, Laboratory, and Dispensary, The New York Therapeutic... 560
Clubfoot... 22
Club, The Hospital Graduates'... 691
Coblentz's Newer Remedies... 632
Cocaine Poisoning, Death due to... 161
Cœliotomy, A New Phase of... 22
Cœliotomy, Uretero-abdominal Fistula after ... 283
Coggeshall, G. A. Letter to the Editor... 752
Coley, W. B. The Disadvantages of Non-absorbable Sutures in Operations for the Radical Cure of Hernia... 275
Colic, The Treatment of Nephritic... 162
College, Bellevue Hospital Medical... 696
College, The Jefferson Medical... 180
College, The State Agricultural, of South Dakota 760
College, The University Medical, of Kansas City 386
College, The Woman's Medical, of Baltimore... 783
Communications," "Privileged, to Professional Men... 502
Conchotome, A New Nasal Cutting Forceps or... 849
Confederation, The, of State Medical and Examining and Licensing Boards... 499
Congress of Dermatology, The Third International... 366
Congress of Gynæcology and Obstetrics, The International... 642
Congress of Internal Medicine, The German.... 264
Congress of Medico-climatology, The World's.. 100
Congress of Psychology, The Third International... 693
Congress, The Second Pan-American Medical.. 652, 718, 783
Congress, The Transactions of the Pan-American Medical... 519
Congress, The Twelfth International Medical... 615

PAGE

Conjunctivitis Eczematosa, Bacteriological Investigations into the Etiology of ... 194
Constipation, The Surgical Treatment of ... 633
Consumption, The Neurotic Origin of Pulmonary ... 229
Consumptives, The Influence of Institutes for, on the Health of the Neighborhood ... 262
Cooke, A. H. Letter to the Editor ... 716
Copper Poisoning from Vine Leaves ... 196
Corectopia ... 194
Cornea, A Burn of the Entire Surface of the, followed by Recovery ... 626
Corneæ, A New Method of Treatment for Vascularized ... 495
Coroner, A Bill to Abolish the Office of, in the State of New York ... 284
Coroner, The Office of, in the State of New York ... 284
Coroner's System, Reorganization of the ... 426
Coronillin ... 504
Correction, A ... 683
Correspondents, Answers to ... 183, 358, 422, 455, 488, 554, 653
Corrigenda ... 182
Corrosive Sublimate, Injections of, in Tuberculous Cystitis ... 328
Corson, J. T. Letter to the Editor ... 784
Corson, The Late Dr. Hiram ... 357
Cortex, Periodical Fluctuations in the Functional Capacity of the Cerebral ... 420
Cough of Measles, A Remedy for the Incessant ... 131
Cough, Some Considerations with Regard to ... 395
Cough, The Tonsillar ... 756
Craig, T. C. The Finding of the Staphylococcus Epidermidis Albus in an Unexpected Manner ... 484
Cramp, Professional, and Bright's Disease ... 386
Creosote in the Treatment of Enlarged Bronchial Glands ... 661
Creosote, Poisoning Due to Injections of ... 260
Creosote, The External Use of, in the Treatment of Malarial Remittent Fevers ... 129
Cretinism, A Study of Sporadic ... 355
Criminals, The Prevention of ... 507
Crutch, The Beaumont ... 720
Curiosity, A Scientific Archæological ... 32
Curtis, G. L. A Plea for Conservative Oral Surgery ... 833
Curvature of the Spine, The Rapid Cure of Rotary-lateral ... 665
Cutter, J. A. Letter to the Editor ... 250
Cyst of the Maxillary Sinus ... 41
Cystitis, Injections of Corrosive Sublimate in Tuberculous ... 328
Cystotomy for Stone ... 122
Cystotomy for Stone, Suprapubic ... 445, 457
Cysts, Hydrocele and Serous, in the Inguino-scrotal Region ... 583, 610

Dacryocystitis, The Treatment of, Acute and Chronic, with Rhinalgin ... 496
Dana, C. L. Letter to the Editor ... 154
Davis, A. E. The Technics of the Trial Case; or, Subjective Optometry ... 800
Deaf-mutes, Photography as an Aid to ... 99
Death of Prominent Persons, The Causes of ... 499, 555
Deaths of Physicians, or Members of their Families:
Adams, Oliver B ... 121
Alison, Lockwood ... 422
Anderson, J. C ... 358
Anway, Jane Phelps ... 53
Armstrong, William S ... 250
Barber, Isaac H ... 184
Beasley, James A ... 217
Behrend, P. J ... 590
Bell, Nellie S. Marsh ... 653
Bidwell, Walter ... 154
Bisland, D. S ... 616
Blake, J. F ... 616
Blanchard, James A ... 89
Bogart, Stephen van Rensselaer ... 89
Boorse, Alice Pierson ... 250
Booth, J. Arthur ... 489
Bosworth, A. W ... 521
Bradley, Mary E ... 845
Burgess, Frank S ... 121
Carpenter, A. B ... 89
Carrington, Paul J ... 217
Carter, John L ... 521
Chamberlain, David C ... 784
Clason, Abraham T ... 811
Colgan, Mary J ... 121
Comegys, C. G ... 358
Copeland, George W ... 616
Corson, Hiram ... 358
Curtis, Martha McCook ... 154
Curtman, Charles O ... 616
Daggett, David L ... 288
Daly, John J ... 521
Day, David ... 358
De Forest, Catherine Sedgwick ... 489
Denison, Lillie Florence Sweetser ... 653
Dwinelle, William H ... 250
Edwards, Emma Winnifred ... 455
Elliot, James Woodward ... 358
Ely, Smith ... 358
Fanning, Nelson ... 358
Farragut, Gertrude M ... 288
Feeny, Doris ... 122
Feuwick, Kenneth N ... 154
Fitch, Clarence L ... 590
Flud, Daniel ... 489

PAGE

Deaths of Physicians, or Members of their Families:
Forster, Edward J ... 684
Frost, Carl Pennington ... 716
Gartzman, Gustav ... 121
Gentebruck, Francis D ... 217
Gillespie, John ... 811
Goddard, Edith ... 54
Going, O. P ... 590
Goss, A. H ... 50
Goss, Oliver ... 590
Gray, Mary A ... 716
Greene, James A., Jr ... 154
Greenman, Harold Bleecker ... 121
Hammond, Thomas ... 19
Harris, B. B ... 189
Harris, James B ... 554
Harris, Nathan O ... 358
Haynes, S. B ... 121
Helmer, A. M ... 590
Henry, William S ... 19
Heyl, Theodore C ... 422
Hodges, Richard M ... 217
Hollingsworth, I. N ... 54
Hough, Thomas L ... 811
House, Henry A ... 288
Hun, Thomas ... 845
Hunter, Alexander S ... 250
Jaggard, W. W ... 288
Johnson, Amos Howe ... 684
Johnson, J. C ... 751
Johnson, Julia A. E ... 422
Johnston, Banrey Stewart ... 616
Jones, Joseph ... 288
Kinniment, D. L ... 521
Kirsten, Adolph ... 154
Lacey, William F ... 455
Lamb, Theodore ... 554
Lowenthal, Herman ... 590
Magoun, G. F ... 184
Mandeville, Dorrance Kirtland ... 387
Mapes, James J ... 521
Matthews, Edward F ... 455
Maull, David W ... 288
McFarlane, Laughton ... 358
McKenzie, John F ... 521
McKinnon, L ... 653
McLean, Catherine V. Maher ... 387
Meyer, Charles Laney ... 54
Moore, C. B ... 716
News, Annie ... 217
Nock, William J ... 387
Noyes, James F ... 288
Parker, Ann ... 845
Patterson, John C ... 653
Picot, Mitchell H ... 784
Pierson, Harry M ... 716
Potts, J. H ... 154
Powell, Thomas Spencer ... 19
Purcell, William J ... 250
Ramsdell, Edwin D ... 811
Randall, George H ... 121
Reeves, James E ... 89
Remsen, Robert G ... 121
Ripley, John Howard ... 250
Robinson, John L ... 811
Robinson, Somerset ... 121
Roosevelt, J. West ... 521
Rose, James M ... 184
Salter, Joseph E ... 288
Saunders, Herbert J ... 288
Simpson, George L ... 653
Small, Andrew V ... 387
Spencer, W. G ... 455
Steel, Thomas ... 784
Storrs, Jane D ... 288
Szabary, Matilda Edwina ... 684
Taber, John N ... 288
Terhune, Alice Ethelyn ... 845
Terry, Wilmont C ... 489
Throckmorton, John A ... 54
Townsend, Smith ... 358
Twombly, Mary E ... 684
Webster, Warren ... 89
Wheaton, Francis L ... 19
Wieber, George ... 184
Wiggans, Lewis Y ... 217
Wigglesworth, Edward ... 154
Williams, Amos D ... 590
Wilson, Henry P. C., Jr ... 554
Winslow, B. H ... 716
Winsor, Carrie A ... 455
Wynkoop, Ann E ... 845
Deformities of Bones, X-Ray Detection of ... 479
Delivery through a Central Rupture of the Perineum ... 308
Depilatories ... 328
Diabetes, An Improved Method of Diagnosticating, from a Drop of Blood ... 301
Diarrhœa, Antiseptics in the Treatment of Infantile ... 58
Diarrhœa of Infants, Orphol in the ... 789
Dickey, J. L. A Cataractous Family ... 181
Digitalis Poisoning in Children ... 170
Diller, T. A Case of Progressive Muscular Atrophy of Sudden Onset ... 740
Dimethylamidoazobenzol, The, or Toepfer's Test for Free Hydrochloric Acid ... 602
Diphtheria, A Collective Investigation of the Antitoxine Treatment of, etc ... 568
Diphtheria, A Critical Analysis of Dr. Winters's Clinical Observations on the Antitoxine Treatment of ... 814
Diphtheria, Aid to the Diagnosis of ... 530

PAGE

Diphtheria and Scarlatina in the District of Columbia, A Study of ... 726
Diphtheria, Clinical Observations upon the Use of Antitoxine in ... 816
Diphtheria, General Statistical Result of the Cases of Ocular, treated by Antitoxine Serum ... 470
Diphtheria, Myrrh in the Treatment of ... 232
Diphtheria, Observations of Antitoxine in ... 217
Diphtheria Septicæmia following; Treatment by Streptococcus Antitoxine ... 243
Diphtheria, The American Pædiatric Society's Collective Investigation of the Antitoxine Treatment of ... 552
Diphtheria, The Antitoxine Treatment of ... 714
Diphtheria, The Treatment of ... 125
Directory, The Trained Nurses' ... 783
Dislocation of the Hip, Congenital ... 434
Dispensary and Hospital, The New York Orthopædic ... 18, 642
Dispensary, The German ... 287
Displacement of the Scapula from the Clavicle ... 543
Diuretin, The Clinical Value of ... 631
Diverticulum, A Case of Meckel's ... 808
Doctor, An English, on the Feeling of the United States toward England ... 127
Doctor, Apropos of Woman's Limitations as a ... 384
"Doctors' Night," A, at a Boston Club ... 120
Doctors' Offices in Business Buildings ... 270
Doctors' Quarters in Office Buildings ... 152
Duboisine as a Hypnotic and Motor Sedative ... 52
Dyar, A. G. A Machine for tubing Bacterial Media ... 657
Dyspepsia, The Employment of Sodium Bicarbonate in the Treatment of Different Forms of ... 216
Dysuria in Women ... 523

Ear, Purulent Discharges from the Middle ... 416
Ear, The Equilibrium Function of the ... 252
Eclampsia ... 252
Eczema, Acute Nephritis in connection with ... 52
Eczema, Formalin in the Treatment of ... 856
Eczema of the Mucous Membrane ... 726
Eczema of the Vulva, The Treatment of ... 856
Eczema, The Principles of the Treatment of ... 563
Eczema, The Treatment of Ordinary Forms of ... 26
Edgar, J. C. The Best Method of teaching Obstetrics ... 711
Edlén, E. A. Ulcers of the Leg ... 352
Education, The Medical, of the Future ... 252
Egypt, The Winter Climate of ... 460
Einhorn, M. The Dimethylamidoazobenzol or Toepfer's Test for Free Hydrochloric Acid ... 602
Electricity in the Treatment of Corneal Opacities ... 495
Empyema, A Subdiaphragmatic Abscess Simulating ... 297
Endometritis ... 24
Endometritis, Steam in the Treatment of Chronic ... 824
Endometritis, Virginal and Senile ... 786
Endoscope, A Uterine and Rectal ... 755
Entropion and Trichiasis, A New Operation for ... 496
Epilepsy, A Peculiar Case of ... 716
Epilepsy, A Treatment for ... 96
Epilepsy, Control of, by Bromides ... 779
Epilepsy, Is the Physiognomy of the Fundus Oculi in, Characteristic? ... 621
Epilepsy, The Medical and Surgical Treatment of ... 738
Epilepsy, The Operative Treatment of Jacksonian and Focal ... 525
Epilepsy, The Treatment of ... 811
Epilepsy, Trional in ... 435
Epithelioma of the Tongue ... 185
Epitheliomata, The Treatment of Malignant Cutaneous ... 123
Erosion of a Rib by a Drainage-tube ... 187
Erysipelas, Ichthyol-traumaticin in the Abortive Treatment of ... 130
Erysipelas, Tannin and Camphor in the Treatment of ... 400
Erythema Nodosum ... 185
Erythropsia ... 622
Eucaine ... 628
Eucaine as a Local Anæsthetic ... 824
Eunuchs, How, are made in Egypt ... 588
Euthanasia ... 191
Examination, A Civil Service ... 750
Examination, A Medical Civil Service ... 468
Examination, The Entrance, in the State of New York ... 284
Examination, The Question of "Preliminaries" in the State ... 216
Excursion, A Medical ... 651
Exhibition, Hanging, Fasting, and Burial as an ... 714
Extracts, A Clinical Test of some of the So called Organic ... 160
Exudations in Women, The Treatment of Pelvic ... 701
Eye Cases, Seven Interesting ... 840
Eye, Local Treatment of the ... 724
Eye Movements, The Influence of the Cerebrum and Cerebellum on ... 493
Eye, Steel in the ... 592
Eyelids, Abnormal Associated Movements of the ... 493
Eyes, On the Indications for the Use of Atropine in the ... 209
Eyes, The, and the Liver ... 847
Eyes, The Position of Repose of the ... 493

Fauvel, The Death of Dr. Charles, of Paris ... 64
Fellowship, The Proposed Leidy ... 120, 131

PAGE

Ferguson, F. U. Letter to the Editor 422
Ferratin, A Therapeutic Test of 512
Fever and its Reduction 353
Fever, Severe Malarial 358
Fevers, The External Use of Creosote in the Treatment of Malarial Remittent 129
Fibroid, Intraligamentous 24
Fibroid Tumors of the Uterus, The Treatment of 145
Fibroids, Sloughing of Uterine, after Abortion and Labor 290
Fistula in Ano in reference to the Integrity of the Rectum after Operation 278, 300
Fistula, Ureter-abdominal, after Cœliotomy .. 383
Flanders, L. W. A Case of Sympathetic Ophthalmitis 176
Flat-foot, The Affections of the Arch of the Foot, commonly Classified as 301
Flux, The Hæmorrhoidal 544
Fly-blisters, Accidents due to the Use of 535
Food *versus* Medicine as a Blood-maker 212
Foods for the Sick 841
Foot, The Mechanics and Treatment of the Broken-down 796
Forceps, A Pile, and Hysterectomy Clamp . 26
Ford, J. H. A Method of Discovering the Amount of Blood in an Animal 79
Foreign Bodies in the Rectum 180
Formalin, A *Résumé* of the Uses of 770
Formol, The Treatment of Purulent Ophthalmia by 495
Formulary, A New Edition of the National 714
Fossa Capitis Femoris, etc., Observations on the 456
Foster, M. L. A Case of Retinal Hæmorrhage 159
Fracture of the Skull, Compound, with Loss of Brain Tissue 744
Fracture Treatment, Vascular Compression in .. 21
Fractures of the Articular Ends of Long Bones, Fissures 21
Fractures of the Lower Extremity, The Treatment of Compound 534
Freeborn, G. C. A *Résumé* of the Uses of Formalin 770
French, W. B. The Malarial Organism 674
Freudenthal, W. Rhinoscleroma 133
Fund, The Rush Monument 504
Furuncles of the Eyelid, The Treatment of 196

Gallstone impacted in the Common Duct 149
Galvano-cautery, The Removal of Powder Grains from the Cornea and Skin by the ... 494
Gargling, A Suggestion to Abolish, in the Treatment of Diseases of the Throat 396
Gastric Diseases, A Journal of 651
Gastro-intestinal Tract, Somatose in Diseases of the 410
Gastrostomy, The Present Status of 410
Gazette, The Cleveland Medical 517
Gestation, A Case of Ectopic 185
Gibbs, J. B. Fistula in Ano in Reference to the Integrity of the Rectum after Operation, 278, 300
Glands, Chronic Enlargement of Lymphatic, etc 97
Glands, The Treatment of Suppurating 51
Glands, Tyson's 19
Glaucoma 497
Glaucoma after Cataract Operations 497
Glaucoma curable without Operation? Is 497
Glaucoma, The Artificial Production of 618
Glaucoma, The Treatment of Simple Chronic .. 497
Glaucoma, The Treatment of Simple, by Multiplied and Repeated Sclerotomies 618
Gl'incurabili 682
Glioma, Retinal 591
Glycero-phosphates, A Contribution to the Study of the 722
Goître, Exophthalmic, Treated with Animal Extracts 163
Goldstein, S. An Adjustable Self-retaining Nasal Speculum 159
Gonorrhœa, Argonin in the Treatment of 97
Gonorrhœa, Ichthyol and Mercurial Ointment in the Treatment of 791
Gordon, O. A. Specialists and General Practitioners 601
Graves's Disease, Observations and Experiments on the Pathology of 623
Gray, L. C. Letter to the Editor 91
Greek, An Historical Sketch of 309
Greek at the Academy 782
Greek, Dr. Rose's Lecture on the Proper Pronunciation of 782
Greek Language, The Modern 322
Greek, The Pronunciation of 650
Griffin, E. H. Chancres found in Unusual Localities 668
Gross, M. On Pyloralgia—Spasm of the Pylorus 320
Guaiacol, Abortion from the Use of 856
Guaiacol in Acute Pulmonary Tuberculosis, The Hypodermic Use of 429
Guaiacol in Tuberculosis 264
Guinea-pigs, A Ready Method of Applying Dr. Abel's Device for Recording 180
Guitéras, R. The General Treatment of Syphilis in Private Practice 804
Gynæcological Operations, Symptomatic *versus* Anatomical Cure after 755
Gynæcology and General Medicine 787
Gynæcology, A Weekly Journal of 248
Gyromele, The Improved 191

Hæmatinuria, A Case of Malarial, with a Study of the Plasmodium 1

PAGE

Hæmatoma of the Spinal Cord, Lumbar Puncture of an Intradural 333
Hæmoptysis, The Treatment of 825
Hæmorrhage, A Case of Retinal 150
Hæmorrhage, Extra-uterine, in Pregnancy 450
Hæmorrhage following the Extraction of a Tooth arrested instantly by Ethyl Chloride. 220
Hæmorrhage, Macular 592
Hæmorrhage, Relation of, to Barometric Pressure 791
Hæmorrhage, Salol and Antipyrine in the Treatment of Uterine 468
Hæmorrhage, Stypticin in the Treatment of Uterine 94
Hæmorrhage, The Value of Voluminous Intestinal Enemata of Warm Saline Solution in Post-partum 161
Hæmorrhages, Infectious 28
Hæmorrhoids 123
Hæmorrhoids, Conservative Surgery in the Treatment of 526
Hæmorrhoids, The Surgical Treatment of 22
Hairy System, An Anomaly of the 660
Hamilton, A. McL., and Brown, W. S. A Case of Mild Stuporous Insanity 448
Harvard Requirement of a Degree for Admission, The 286
Hasbrouck, E. M. The Treatment of Abscess by the Otis Method 776
Headaches, The Treatment of Certain Obstinate 435
Heart Diseases, The Dietetic Treatment of Chronic 129
Heart Lesions, Organic, Complicating Pregnancy 242
Heart, The Baths of Nauheim in the Treatment of Diseases of the 671
Heart, The Descriptive Anatomy of the Human. 455
Heart, Traumatic Rupture of the 691
Hemianopsia, Coincidence of Heteronymous Temporal, with Diabetes Insipidus 622
Hemianopsia, Nasal 622
Hemichromatopsia, Cases of, etc 622
Hengst, D. A. Acute Otitis Media as a Complication of Typhoid Fever 747
Hernia, A Peculiar Case of Strangulated Umbilical 280
Hernia, A Plastic Operation for 21
Hernia, A Successful Operation for, on an Infant 422
Hernia, The Disadvantages of Non-absorbable Sutures in Operations for the Radical Cure of 275
Hernia, The Removal of the Whole Epiploon from the Sac of a Strangulated, followed by Recovery 162
Heterophoria, The Parallax Test for 623
Heteroplasty with Celluloid to Cover Defects in the Skull 425
Hett, J. E. A Rapid and Rational Method for the Removal of Hypertrophies of the Inferior Turbinated Bones 178
Heuel, F. An Electro-therapeutical Cabinet .. 504
Hewetson, S. W. Letter to the Editor 19
Hiccough, Severe, Cured by Inhaling Fumes of Burnt Paper 400
Hip Disease, The Diagnosis of 819
Histology, Practical, for Large Classes 176
Hodges, The Late Dr. Richard M., of Boston ... 286
Hospital, Bellevue 153, 454
Hospital for Women and Children, The Mary Thompson, of Chicago 31
Hospital, St. Mark's 88
Hospital, St Mary's, Philadelphia 323
Hospital, St. Vincent's 520
Hospital, The City 215
Hospital, The Harlem 856
Hospital, The Long Island College, Brooklyn ... 553
Hospital, The Manhattan Eye and Ear 153
Hospital, The Methodist Episcopal, in Brooklyn 287, 682, 760
Hospital, The Mountainside, of Montclair, New Jersey 613
Hospital, The New York Lying-in 90
Hospital, The Woman's, Philadelphia 589
Hospitals, Civil Service Examinations and the City 19
Hospitals, The Medical Service of the City, and the Civil Service Law 368
"Hot Spring," The Houston Street 322
Hotchkiss, L. W. Laparotomy for Intestinal Perforation occurring in the Course of Typhoid Fever 43
Howe, L. Letter to the Editor 288
Hunter, The Late Dr. Alexander S 421
Hupp, F. LeM. The Present Status of Gastrostomy, etc 410
Hydrocele and Serous Cysts in the Inguino-scrotal Region 583, 610
Hydrogen, Poisoning with Arseniureted 791
Hydrophobia, Hydropathic 578
Hygiama, Nutrose and 781
Hygiene, Military 28
Hygiene, The, of the Face 400
Hyperidrosis, The Treatment of 263
Hypermetropia of High Degree 623
Hypertrophies of the Interior Turbinated Bones, A Rapid and Rational Method for the Removal of 178
Hypertrophy of the Breasts in a Young Girl ... 330
Hypnotic and Motor Sedative, Duboisine as a ... 52
Hypnotism as a Therapeutic Agent 703
Hysterectomy for Cancer, The Results of 262
Hysterectomy, Vaginal 422
Hysterectomy, Vaginal, with Clamps 289

PAGE

Hysteria, Tetanoid 258
Hysteria, The Diagnosis of 198, 23
Hysteropexy, Ventro- 54

Ichthyol and Thiol 263
Ichthyol in the Treatment of Burns 31
Ichthyol in the Vomiting of Pregnancy 576
Ichthyol-traumaticin in the Abortive Treatment of Erysipelas 130
Idiocy, A Family Form of 697
Imbrication or the Lap-joint Method—a Plastic Operation for Hernia 21
Imponderable, The New 153
Incident, An Amusing 728
Incontinence of Urine, A New Form of 466
Index Medicus, The 155
Indigestion of Starchy Foods, The Symptoms and Diagnosis of 424
Infancy and Childhood, The Acute Retropharyngeal Abscess of 440
Infant, A Röntgen Picture of a Marasmic 540
Infant, A Successful Operation for Hernia on an 422
Infirmary, The New York Eye and Ear 770
Inflammation, Chronic, of the Seminal Vesicles with Hæmorrhage 21
Inflammation, Diffuse Pelvic 522
Inflammation of the Vermiform Appendix, Experimental 331
Inflammation, Ulcerative, of the Cornea 524
Influenza, Diseases of the Eye Dependent upon. 621
Influenza, The Influence of, on the Sexual Apparatus in Women 781
Information, Privileged Legal 688
Ingraham, C. W. Treatment of Acute Lobar Pneumonia by a High Degree of Heat, etc .. 414
Injuries of Peripheral Nerves 81
Injuries of the Limbs, Conservatism in the Treatment of 330
Insane, The Hypnotic Action of Scopolamine in the 357
Insane, The Influence of Intercurrent Disease on the Mental Condition of the 760
Insanity, A Case of Stuporous 448
Insanity from Poisons Generated in the Intestines 813
Insanity Laws, The, of the State of New York. 750
Insanity, Two Successful Operations for Traumatic 19
Insects' Bites, A Preventive of 264
Insomnia, Nervous 229
Insomnia, The Frequent Dependence of, etc., upon Diseases of the Gastro-intestinal Tract 659
Instruction, Technical, in our Medical Colleges and Laboratories 374
Intertrigo, An Application for 856
Intestinal Perforation occurring in the Course of Typhoid Fever, Laparotomy for 43
Intestine, The Absorptive Power of the Large .. 517
Intra-uterine Life, Diseases of 272
Inunctions, Mercurial, in the Treatment of Diseases of the Nervous System 367
Iodism, Sulphanilic Acid in the Treatment of .. 467
Iodoform, Airol, a New Substitute for 196
Iodoform, Sanaform, a New Substitute for 721
Ipecacuanha in the Treatment of Bee Stings 435
Irido-choroiditis, Septic, Consecutive to Uterine Hæmorrhage 497
Iritis, Scopolamine Hydrobromide in the Treatment of Plastic 309
Irrigation of the Stomach with Nitrate of Silver 597
Irrigator for the Vagina, A Double-current. 429, 489
Itch, The Coolie 849
Itching of the Anus 702
Itching of the Vulva, The Treatment of 662

Jacobi, A. Nephritis of the Newly Born 65
Jacoby, G. W. Lumbar Puncture of the Subarachnoid Space 6
Johnson, A. B. Suprapubic Cystotomy for Stone 445, 457
Johnson, The Death of Sir George, M. D., F. R. S., of London 783
Joint Diseases, Dry Heat and High Temperature in the Treatment of 20
Journal, A New Obstetrical 182
Journal, A New Russian 356
Journal, A, of the Medico-chirurgical Frontier. 284
Journal, A Proposed, of Medical History and Geography 552
Journal of Experimental Medicine, The 283
Journal, The Intercolonial Medical, of Australasia 410
Journal, The Montreal Medical 16, 216
Journal, The New Orleans Medical and Surgical 314
Journals, New 52
Journals, New, and Journalistic Changes 88
Journals Published in Paris, The Multiplication of Medical 64
Justice. Letter to the Editor 121

Kaufmann, J. Motor Disturbances of the Stomach 405
Kelly, A Bohemian Complaint against Dr., of Baltimore 216
Kelly, A. O. J. Venous Phenomena 72, 110
Kelly, J. E. Septicæmia following Diphtheria; Treatment by Streptococcus Antitoxine 243
Kelsey, C. B. Letter to the Editor 387
Kelsey, C. B. The Relation of Rectal Surgery to other Specialties 197
Kelsey, C. B. The Surgical Treatment of Constipation 638
Kelso, H. J. Letter to the Editor 358

PAGE

Kemp, R. C. A Double-current Irrigator for the Vagina ... 439
Kemp, R. C. Letter to the Editor ... 489
Kephir ... 82
Keratitis, Bacteriological Investigations into the Etiology of ... 494
Kershner, Medical Inspector, of the Navy ... 357
Kidney, The Early Diagnosis of Tuberculous ... 424
Kidneys, Deficient Excretion from, not Organically Diseased, in Relation to some of the Disorders Peculiar to Women ... 425
Kiliani, G. T. Lumbar Puncture of an Intradural Hæmatoma of the Spinal Cord ... 323
Kitson-Playfair Case, Professional Secrecy and the ... 566
Knee, Cases of Loose Body of the ... 830
Knight, C. H. Cyst of the Maxillary Sinus ... 41
Koch's Bacillus in the Non-tuberculous ... 567
Koplik, H. Digitalis Poisoning in Children ... 170
Koplik, H. The Acute Retropharyngeal Abscess of Infancy and Childhood ... 440
Kosotoxin ... 330, 568
Kossmann, Prof. Dr. Letter to the Editor ... 616
Krauss, W. C. Nitroglycerin in the Treatment of Sciatica ... 273
Kreider, G. N. Surgical Cleanliness ... 729

Labor, Cardiac Disease during Pregnancy and ... 77
Laboratory, The New York Electro-therapeutic Clinic ... 811
Lactophenine, The Dose of, for Children ... 332
Lambert, S. W. Letter to the Editor ... 90
Laminectomy, etc ... 382
Laparotomy for Intestinal Perforation occurring in the Course of Typhoid Fever ... 43
Laparotomy in the Newly Born ... 536
Laryngological and Rhinological Literature, Recent ... 165, 827
Larynx, A Horse Leech in the ... 193
Law, The Rum and Narcotic Instruction ... 153
LEADING ARTICLES:
Academy of Medicine, The, and the Minor City Hospitals ... 16
Antitoxine, The Danger of Diphtheria ... 551
Cattle, The Cornstalk Disease of ... 355
Charities, Public Grants to Private ... 17
Convulsive Attacks Characterized by Laughter ... 385
Craniotomy, A New Device for Flap ... 419
Criticism, A Severe ... 551
Degeneration, Deformity and Paralysis of the Uvula as a Stigma of ... 650
Dispensary and Hospital, The New York Orthopædic ... 152
Examination, The Entrance, in the State of New York ... 452
Fetich, The Examination ... 809
Fœtus, The Cause of the Preponderance of Dorso-anterior Positions of the ... 384
"Frauenarzt in Altona," More Criticism of the ... 587
Gout and Rheumatism, The Uric-acid Theory of ... 52
Joints, Floating Bodies in the ... 453
Kershner, The Case of Dr ... 420
Labor? What is Natural ... 152
Leprosy, The Serum Treatment of ... 87
Milk, Certified ... 119
Mortality from Casualties, A Great Insurance Company's Experience in ... 681
Nurses, The Proper Clothing for ... 749
Oyster, The Tainted ... 518
Pasteur, A Proposed Paris Monument to ... 355
Pessary, The Lemon as a ... 682
Pictures, The Röntgen ... 282
Pneumonia in Children, The Non-medical Treatment of ... 486
Podalic Version with the Patient in the Prone Posture ... 844
Poison, A New Arrow ... 283
Quinosol and the Craze for New Antiseptics ... 385
Regeneracy ... 613
Röntgen Portraiture, The Progress of the ... 355
Salicylic Acid, The Irritant Action of, on the Air-passages ... 419
Specialties, The Overlapping of ... 215
Stomach, The Study of Diseases of the ... 321
Syphilis, Pathognomonic Signs of Congenital ... 781
Syphilis, The Remedial Action of Erysipelas in ... 248
Testimony, Medical Expert ... 181
Typhoid Fever and the Water Supply ... 713
Lectures, The Cartwright ... 421, 520
Lectures, The Middleton Goldsmith ... 153
Leszynsky, W. M. Bilateral Neuritis of the Brachial Plexus following Acute Croupous Pneumonia ... 469
Leucocytes, The Granular ... 193
Leucocythæmia, The Treatment of, with Bone Marrow ... 564
Lewis, W. M. Melæna Neonatorum ... 137
Library, A Physician's ... 182
Library, Dr. Emmet's Historical ... 810
Library, The New York Hospital ... 513
Library, The New York Public ... 53
Lichtschein, L. Hypnotism as a Therapeutic Agent ... 703
Ligaments, Intra-abdominal Shortening of the Round ... 22
Ligature, The Absorbable, in Abdominal Surgery ... 847
Lindsey, C. Laminectomy, etc ... 382
Lithæmia ... 337
Lithium Preparations ... 567
Liver, Cirrhosis of the ... 361

PAGE

Liver, The Eyes and the ... 347
Liver, Tongue-like Accessory Lobes of the ... 846
Loveland, B. C. Food *versus* Medicine as a Blood Maker ... 212
Lovett, R. W., and Dane, John. The Affections of the Arch of the Foot commonly classified as Flat-foot ... 304
Lovett, R. W. The Mechanics and Treatment of the Broken-down Foot ... 796
Lumbar Puncture of the Subarachnoid Space ... 6
Lungs, Heretofore Undescribed Neuroses of the ... 767
Lungs, The Diagnosis of Malignant Tumors of the ... 173, 204

Mabbott, J. M. Three Warnings of Interest to Obstetricians ... 483
Magnet, The Real Value of the, for the Removal of Foreign Bodies from the Eye ... 496
Malarial Fever, Severe ... 358
Malarial Fever, Water *versus* Atmosphere the Cause of Malignant ... 124
Malarial Organism, The ... 674
Manley, T. H. Notes on Hydrocele and Serous Cysts in the Inguino-scrotal Region ... 583, 610
Marcy, H. O. The Technics of the Buried Tendon Suture ... 12
MARINE HOSPITAL SERVICE, CHANGES OF MEDICAL OFFICERS OF THE:
Austin, H. W ... 53, 715
Bailhache, P. H ... 421, 485, 715
Banks, C. E ... 53, 183, 421, 485, 715, 783
Blue, Rupert ... 16, 715
Brown, B. W ... 53, 783
Carrington, P. M ... 421
Carter, H. R ... 53, 715
Cobb, J. O ... 16, 287, 485
Cumming, H. S ... 53, 183, 715
Gardner, C. H ... 183, 783
Geddings, H. D ... 287
Glennan, A. H ... 16
Godfrey, John ... 715
Goodwin, H. T ... 183
Guiteras, G. M ... 183, 358, 715
Hamilton, J. B ... 421, 715, 783
Irwin, Fairfax ... 53, 421, 783
Kalloch, P. C ... 287
Kinyoun, J. J ... 16, 421, 554
Magruder, G. M ... 183
Mathewson, H. S ... 554, 715
McIntosh, W. P ... 53
Murray, R. D ... 287, 715
Norman, Seaton ... 554
Nydegger, J. A ... 183, 287, 421, 554
Peckham, C. T ... 287, 485, 715
Perry, J. C ... 715
Pettus, W. J ... 16, 183
Prochazka, Emil ... 53, 183, 421, 485
Purviance, George ... 52, 715
Rosenau, M. J ... 287
Sawtelle, H. W ... 715
Smith, A. C ... 183, 358
Sprague, E. K ... 183, 715
Sherrard, R. Tabb ... 554
Stewart, W. J. S ... 183, 554, 715
Stoner, G. W ... 16, 183, 715, 783
Stoner, J. B ... 485
Strayer, Edgar ... 287
Tabb, S. R ... 554
Thomas, A. R ... 53
Vaughan, G. T ... 287, 358, 715
Wasdin, Eugene ... 715
Wertenbaker, C. P ... 554
Wheeler, W. A ... 183, 783
White, J. H ... 783
Wickes, H. W ... 183, 358
Williams, L. L ... 53, 287, 485
Young, G. B ... 358
Marine-Hospital Service, The ... 18, 120, 652
Marriages, Consanguineous ... 722
MARRIAGES OF PHYSICIANS, OR MEMBERS OF THEIR FAMILIES:
Achee, Andrew C ... 520
Adams, Albyn Lincoln ... 784
Ager, Louis Curtis ... 784
Allison, Charles Clement ... 154
Archinard, Louis D ... 520
Atwood, Charles Edwin ... 184
Baker, Francis M ... 845
Barndt, A. S ... 590
Barry, William F ... 554
Beall, Rosa ... 784
Black, George Melville ... 489
Bourgeois, Camille ... 811
Brathwaite, Frederick Gretton ... 811
Buckler, Thomas H ... 217
Buckmaster, Minnie ... 751
Butterworth, William Walton ... 590
Campbell, Clarence Gordon ... 520
Campbell, R. C ... 751
Carman, Virginia B ... 53
Carter, Curtis Braxton ... 616
Chapleigh, Alfred ... 784
Charlet, A. M ... 554
Chick, Edson Spaulding ... 89
Christie, George ... 845
Clarke, Jennie T ... 489
Cole, Frederick Turner ... 684
Copeland, J. L ... 845
Crawford, J. William ... 811
Darrington, John ... 520
Davidson, Frank E ... 250
Diebl, Charlotte ... 288
Dixon, Edwin Hartley ... 489
Driskill, T. F ... 590

PAGE

MARRIAGES OF PHYSICIANS, OR MEMBERS OF THEIR FAMILIES:
Ellis, James N ... 270
Fitz-Gerald, Paul ... 811
Fowler, Edward Payson ... 653
Francis, Carleton S ... 489
Fuller, S. Jennings ... 590
Garrett, Van Franklin ... 616
Gibb, William Travis ... 684
Grant, Lillian Henrietta ... 121
Haas, Marshall ... 845
Halsey, John S ... 845
Haskell, Henry Hill ... 616
Hesser, George T ... 684
Hoyl, Ashton B ... 590
Hunter, Ethel Olivia ... 784
Jacoby, Douglas P. A ... 288
Johnson, Dwight D ... 288
Jones, R. Fleming ... 616
Kearney, Francis James ... 520
Kendal, Hiram ... 784
Koester, Charles George ... 784
Kovler, Frederick ... 121
Lamadrid, Harriet Ivins ... 845
Lebby, Katherine G ... 554
Lewengood, Samuel ... 616
Linley, William J ... 554
Linson, Eloise ... 554
Mann, Ethel ... 845
McGee, W. Clay ... 489
McNab, Duncan ... 590
Meade, Henry Bruce ... 358
Mermilliod, Dr ... 489
Mills, T. L., Jr ... 616
Mimmack, Alfred E ... 716
Morell, Harry ... 184
Murphy, Marie Josephine ... 520
Odeneal, Erskine P ... 455
Page, Frank Wilfrid ... 422
Parker, Edward L ... 716
Pearse, Henry Seymour ... 811
Pfeiffer, Felix ... 616
Pinckard, Charles Philip ... 616
Pitts, Robert Newton ... 554
Pooler, L. J ... 751
Porter, W. O ... 590
Ruby, John T ... 616
Schorse, Marie ... 387
Somerville, William G ... 521
Talmage, Lillian ... 554
Tefft, Dorothy O ... 684
Torek, Franz ... 616
Twohey, John J ... 554
Vandenberg, Frank P ... 811
Washburn, Helen C ... 616
Westervelt, John Douglas ... 784
Williams, George C. F ... 250
Wood, Ida ... 554
Wunderlich, William ... 521
Massage in the Treatment of Sprains and Bruises ... 300
Mastoiditis, Three Cases of Hysterical ... 603
Materia Medica and Therapeutics, The Study of ... 576
Materia Medica, Bracken's ... 251
Maxillary Sinus, Cyst of the ... 41
Maybrick Case, The ... 387
Maybrick, The Case of Mrs ... 164
Mayer, E. The Nasal Mucous Membrane ... 775
Mays, T. J. The Treatment of Hæmoptysis ... 825
McCassy, J. H. Seven Interesting Eye Cases ... 840
McCosh, A. J. A Case of Gallstone impacted in the Common Duct ... 149
McDowell, W. J. Theory and Practice of the Counter-environmental Treatment of Pulmonary Tuberculosis ... 642, 676
Measles, Antipyrine in the Treatment of ... 192
Medical Education, Higher ... 61
Medical Examiners of New Jersey, The State Board of ... 51
Medical Examiners, The National Confederation of State ... 488
Medical Examining Boards, The Relations of, to the State, to the Schools, and to Each Other ... 664
Medical Periodicals, Notice to Librarians and to Physicians having Unused ... 181
Medical Record, The Canada ... 153
Medical Record, The Southwestern ... 151
Medical Semi-monthly, The Virginia ... 420, 588
Medicine in France, The Right of Foreigners to Practise ... 770
Medicine, Indian Systems of ... 433
Medicine, Some Needed Reforms in ... 525
Medicine, The Danger of Small Numbers for the Progress of ... 143
Medicine, X Rays in ... 782
Medicus, Letters to the Editor ... 89, 251
Melæna Neonatorum ... 137
Memorial, The Wilhelm Meyer ... 519
"Menarche," The Heart Diseases of the ... 503
Ménière's Disease ... 546
Meningitis, Bleeding in some Cases of ... 353
Meningocele ... 55
Menstrual Wave, Clinical Importance of the ... 787
Mercury, Cantharidin as an Adjunct to ... 164
Metcalfe, O. Pneumonia ... 117
Meyer, J. Removal of a Carcinoma Mammæ after Two Injections of Protonuclein into the Mass of the Tumor ... 214
Meyer, W. Catheterism of the Ureters in the Male and in the Female, etc ... 369
Midwives, Rules for ... 425
Midwives, The Licensing of ... 184

PAGE

Milbury, F. S. A New Nasal Cutting Forceps or Conchotome... 849
Milk Question, The... 365
Milk, The Chemical and Physiological Changes in, caused by Boiling... 30
Milk, The Filtration of, through Absorbent Cotton... 90
Milk, The Indigestibility of... 96
Mills, W. Valedictory Address to the Graduates in Comparative Medicine and Veterinary Science of McGill University, Montreal... 505
Mills, W. S. Foods for the Sick... 841
Miscarriage, Accidental, followed by Pelvic Inflammation, etc... 745
Mitchell, S. Letter to the Editor... 289
Molluscum Contagiosum, The Diagnosis of... 151
Moore, J. E. Letter to the Editor... 717
Morals, Surgical... 432
Morphine in the Treatment of Hysterical Anorexia... 265
Morphine, Tetanus following Repeated Injections of... 759
Morphine, The True Curative Dose of Sulphate of 516
Morton, H. McI. Primary Sarcoma of the Orbit. 508
Morton, W. J. A Röntgen Picture from a Medical Point of View... 333
Morton, W. J. A Röntgen Picture of the Bones of the Wrist and Hand... 516
Morton, W. J. X-Ray Detection of Deformities of Bones... 479
Moser, W. The Anatomical Changes in Arsenical Poisoning... 746
Mucous Membrane, The Nasal... 775
Munson, E. L. Report of a Case of Chronic Alcoholism treated Empirically... 281
Muren, G. M. The Superiority of Thiol to Ichthyol... 842
Muscular Unbalance, So-called, and its Treatment... 619
Myopia, Removal of the Lens in High... 495
Myopia, The Operative Treatment of... 623
Myopia, The Pathogenesis of... 623
Myositis of the Recti Abdominalis Muscles... 94
Myrrh in the Treatment of Diphtheria... 232
Myxœdema, Thyreoid Extract in the Treatment of... 297

Nails, Ringworm of the... 230
Narcosis, Oxysparteine as a Cardiac Stimulant in Chloroform... 597
Nauheim, The Baths of, in the Treatment of Diseases of the Heart... 471
Navy, Changes of Medical Officers of the:
Bagg, C. P... 53, 209
Baker, J. W... 844
Baldwin, L. B... 715
Biddle, Clement... 652
Blakeman, R. S... 845
Bogert, E. S... 554
Bryant, P. H... 653, 844
Byrnes, J. C... 653
Cook, F. C... 844
Curtis, L. W... 287
Derr, E. Z... 844
De Valin, C. M... 182, 554, 715, 844
Dickinson, Dwight... 287
Drake, N. H... 715
Dubose, W. R... 421
Farenholt, A... 182
Farwell, W. G... 182
Flint, J. M... 653
Guest, M. S... 53, 844
Guiteras, D. M... 287
Guthrie, J. A... 182
Harmon, G. E. H... 421
Harris, H. N. T... 653
Hawke, J. A... 182
Hibbett, C. T... 844
Hubbard, G. C... 183
Johnson, M. K... 589, 844
Kite, I. W... 715
La Motte, H... 421, 589
Leach, P... 715
Lowndes, C. H. T... 209, 421
Marmion, R. A... 715
McClurg, W. A... 653, 844
McCormick, A. M. D... 653
McMurtrie, Daniel... 653
Moore, J. M... 554, 653
Morris, L... 287
Owens, Thomas... 421
Parker, J. B... 421
Percy, H. T... 844
Pusey, A. B... 183
Rixey, P. M... 421
Rosenbleuth, J. C... 358
Russell, A. C... 845
Shipp, E. M... 358, 653, 715
Siegfried, C. A... 182, 844
Simons, M. H... 183
Steele, J. M... 183, 250
Stitt, E. R... 844
Stokes, C. F... 653, 844
Van Reypen, W. K... 715
Von Wedekind, L. L... 844
Wales, P. S... 287
Ward, B. R... 454
Wheeler, W. N... 845
Whiting, R... 845
Wilson, H. D... 715
Winslow, G. F... 183, 653
Wise, J. C... 454
Young, L. L... 554

PAGE

Nephritis, Acute, in Connection with Eczema.. 52
Nephritis, A Fatal Case of Chronic... 769
Nephritis of the Newly Born... 65
Nerve Cells, The Nomenclature of... 373
Nerves, Injuries of Peripheral... 81
Nervousness," "Only... 44
Nervous System, The Anatomical Nomenclature of the... 823
Neuralgia connected with Uterine Affections, The Treatment of Submammary Intercostal 722
Neuralgia, Operative Treatment of Trifacial... 784
Neurasthenia, Special Education as a Means of Treatment in Chronic... 522
Neurasthenia, The Suprarenal Capsule in the Treatment of... 627
Neurasthenia, The Treatment of... 846
Neuritis, Bilateral, of the Brachial Plexus, following Acute Croupous Pneumonia... 469
Neuritis complicating Dislocations of the Shoulder and Elbow... 426
Neuritis, Optic, consecutive to Ozæna... 620
Neurolysis, Nerve Suture and... 837
Neuroses of the Lungs, Heretofore Undescribed 767
New York, Infectious Diseases in... 18, 53, 88, 120, 153, 182, 216, 249, 284, 323, 357, 386, 420, 454, 488, 519, 553, 588, 615, 652, 683, 714, 750, 782, 810, 844
New York, The Entrance Requirements in the State of... 464
News, The Medical... 32
Nicouline, The Physiological Action of... 663
Nitroglycerin in the Treatment of Sciatica... 273
Nomenclature, Medical... 821
Norbury, F. P. Lithæmia... 837
Nose, Digital Examination in the Diagnosis and Treatment of Diseases of the... 25
Nose, the Throat, and the Ears, The Influence of Sea Air on Affections of the... 264
Noyes, W. B. A Study of Sporadic Cretinism.. 335
Nuclein, Yeast, in the Treatment of Hip-joint Disease... 326
Nucleins, Some Facts concerning... 480
Nucleins, The, and their Relative Position in Sero-therapeutics... 125
Nurses, A Proposed Hospital Ward for... 598
Nutrose and Hygiama... 781

Obesity, Ætiology and Pathogeny of... 791
Obituaries:
Fenwick, Kenneth M., M. D., of Kingston, Canada... 154
Roosevelt, J. West... 521
Wigglesworth, Edward, M. D., of Boston... 154
Obstetric Cases, Some Observations on... 607
Obstetricians, Three Warnings of Interest to... 483
O'Conor, J. Carbuncle... 582
O'Conor, J. Displacement of the Scapula from the Clavicle... 543
O'Conor, J. Excision of the Cervix Uteri... 606
O'Conor, J. Excision of the Tongue for Cancerous Disease... 511
O'Conor, J. Ventro-hysteropexy... 542
Oculists and Opticians, The Relations which should exist between... 525
Odontodol... 195
Ohlmacher, A. P. A Ready Method of Applying Dr. Abel's Device for recording Guinea-pigs... 180
Ohlmacher, A. P. Technical Instruction in Our Medical Colleges and Laboratories... 374
Omentum ,The Removal of almost the Whole, from a Hernial Sac... 553
Opacity of the Lens, and on Luxation, Observations on Some Phases of... 495
Ophthalmia, Legal Measures for Preventing the Spread of... 64
Ophthalmia, Purulent Metastatic... 418
Ophthalmia, The Pathogenesis of Sympathetic. 495
Ophthalmia, The Treatment of Purulent, by Formol... 495
Ophthalmitis, A Case of Sympathetic... 176
Ophthalmology, Reports on... 493, 618
Opium, The Therapeutic Abuse of... 193
Optometry, The Technics of the Trial Case; or Subjective... 800
Orbit, A New Operation for the Preparation of an, for the Insertion of an Artificial Eye.... 591
Orbit, Primary Sarcoma of the... 508
Orchitis, The Relation of Parotiditis to... 689
Orexine, The Medicinal Use of... 696
Orphanage, The Hebrew Sheltering Guardian.. 216
Orphol in the Diarrhœa of Infants... 789
Osteo-arthropathy and Acromegaly, Hypertrophic Pulmonary... 33
Osteosarcoma of the Tibia... 378
Otis, E. O. The Sanatorium or Closed Treatment of Phthisis... 761
Otitis Media, Acute, as a Complication of Typhoid Fever... 747
Ovarian Derivatives, The Use of, etc... 821
Ovariotomy followed by Pregnancy... 788
Oxygen, The Therapeutic Value of... 230
Oxysparteine as a Cardiac Stimulant in Chloroform Narcosis... 597
Oysters, Bacteria in... 725

Pain, Intermenstrual... 260
Pain, The Diagnostic Value of Sudden and Acute, as a Symptom in Abdominal Disease. 430
Palate, Papillomata of the Soft... 470
Papillomata of the Soft Palate... 470
Paquin, P. Letter to the Editor... 90
Paquin, P. Some Criticisms of Serum Therapy, etc... 732
Paraldehyde in Asthma... 504, 591

PAGE

Paralysis, A Case of Acute Bulbar... 341
Paralysis, Bilateral Abducens, after Diphtheria. 621
Paralysis, Landry's, following Influenza... 562
Paralysis of Accommodation treated with Behring's Antidiphtheritic Serum... 404
Paralysis, Pseudo-hypertrophic Muscular... 122
Park, F. E. A Case of Tetany... 742
Parotiditis, The Relation of, to Orchitis... 689
Parturition made Easy... 591
Pathology, A Chair of Comparative, in Harvard University... 599
Pathology, On the Evolution of... 253
Pathology, The Value of the Comparative Method in the Study of... 426
Patrick, H. T. The Diagnosis of Hysteria. 198, 234
Paul, The Death of Dr. Constantine, of Paris... 589
Pearse, H. S. Salophen in Acute Articular Rheumatism... 345
Pental and its Administration... 461
Pericardium of the Left Side, Absence of the... 455
Perinæotomy, Synthetic, in Lacerations of the Perinæum... 124
Perinæum, Delivery through a Central Rupture of the... 368
Perinæum, The Preservation of the... 846
Peritonitis, Local... 101
Peritonitis, Tuberculous... 786
Perry, J. L. Letter to the Editor... 55
Peterson, F. The Medical and Surgical Treatment of Epilepsy... 738
Phelps, C. Asphyxia from Fæcal Vomiting during the Administration of Ether... 377, 390
Phelps, C. Osteosarcoma of the Tibia... 378
Phelps, C. Pistol-shot Wound of the Second and Third Cervical Vertebræ... 377
Phelps, C. Thrombosis of the Popliteal and Tibial Arteries... 378
Phenacetine as an Antipyretic... 663
Phenocoll in Whooping-cough... 330
Phonendoscope, The... 399
Photo-fluoroscope, The... 521, 537
Photography as an Aid to Deaf-mutes... 99
Photography, The New... 537
Phthisis, The Sanatorium or Closed Treatment of... 761
Physician, A Woman proposed as a, to a Prison... 215
Physician, An Aged, in Distress... 588
Physician, An American Parable of the Blacksmith and the... 100
Physician, An Outrage on a... 88, 123
Physicians, The Duration of Life among... 630
Picciola, M. Mariani and his... 488
Picric Acid in the Treatment of Burns... 130
Pirogof in the Crimean War... 99
Placenta, The Management of the... 122
Playfair Slander Case, The... 453
Pleurisy, its Ætiology and Pathology... 359
Pleurisy, The Symptoms, Treatment, and Sequelæ of... 359
Pneumonia... 117
Pneumonia, Cold Applications in... 613
Pneumonia, The Treatment of, without Drugs.. 526
Pneumonia, Treatment of Acute Lobar, by a High Degree of Heat... 414
Poisoning, Rhus... 62
Polak, J. O. Uretero-abdominal Fistula after Cœliotomy... 883
Polyclinic, The New York... 826
Potassium, A Cutaneous Outbreak presumably due to the Ingestion of Acetate of... 381
Potassium, A Note on the Use of Permanganate of, in Diseases of the Skin... 184
Potassium, Cantharidate of, in the Treatment of Tuberculosis of the Wrist... 328
Potassium Chlorate in the Treatment of Tumors of the Mouth... 503
Potassium Nitrate in the Treatment of Burns... 368
Pregnancy and Labor, Cardiac Disease during.. 77
Pregnancy, Extra-uterine Hæmorrhage in... 450
Pregnancy following Removal of both Tubes and Ovaries... 787
Pregnancy, Organic Heart Lesions complicating... 242
Preston, G. J. Congenital Chorea... 350
Prize, The Appleton... 811
Prize, The William F. Jenks Memorial... 632
Prolapse of the Uterus, A Sixteenth-century Plan of Treating... 627
Prostatectomy... 171
Prostatitis and Stricture of the Urethra, Bicycle Riding upon Improperly Fitting Saddles as an Ætiological Factor in... 243
Protonuclein in the Treatment of Anæmia... 758
Pruritus, The Treatment of Vulvar... 300
Ptosis, A New Operation for... 497
Puncture, Lumbar, of an Intradural Hæmatoma of the Spinal Cord... 333
Pupil, The Physiology of the Diameter of the.. 494
Pupils, Paradoxical Response of the, to the Stimulus of Light... 556
Purgative, Guaiac Resin as a... 366
Purgatives, Experimental Researches with... 598
Purulent Discharges from the Middle Ear... 416
Pyloralgia—Spasm of the Pylorus... 320
Pylorectomy in America... 524
Pylorus, Spasm of the... 320
Pyrogallic Acid, Poisoning with... 790

Quack, The, as a Tempter... 195
Quinine as an Antipyretic... 663
Quinine, The Abuse of... 161
Quinosol, a New Antiseptic... 130
Quinosol as an Antiseptic... 616

PAGE

Rabinovitch, L. G. Letter to the Editor..... 19
Rabinovitch, L. G. On Fever and its Reduction. Bleeding in Some Cases of Meningitis..... 373
Ranney, A. L. Letter to the Editor..... 811
Rays, The Röntgen..... 216
Reader, A. Letter to the Editor..... 555
Recorder, The Clinical..... 250
Rectum, Foreign Bodies in the..... 180
Reeve, J. C., Jr. Letter to the Editor..... 54
Registration and Examination, The Ohio Board of Medical..... 421
Republication without Credit..... 454
Resin, Guaiac, as a Purgative..... 366
Resorcin in Dermatology, Some Uses of..... 853
Review, The American Medical..... 182
Review, The Western Medical..... 776
Rheumatism, Salacetol as a Remedy in, and in Intestinal Diseases..... 468
Rheumatism, Saligenin in the Treatment of Acute..... 503
Rheumatism, Salophen in Acute Articular..... 345
Rhinalgin, The Treatment of Acute and Chronic Dacryocystitis with..... 496
Rhinoscleroma..... 123
Rhus Poisoning..... 62
Rib, a Case of Cervical..... 208
Richardson, G. T. A Therapeutic Test of Ferratin..... 512
Ringworm of the Nails..... 230
Ripley, The Late Dr. John Howard..... 240
Rives, W. C. The Baths of Nauheim in the Treatment of Diseases of the Heart, etc..... 471
Robinson, B. Local Peritonitis..... 101
Röntgen Picture, A, from a Medical Point of View..... 393
Röntgen, The New Rays of, etc..... 537
Roosa, D. B. St. J. Letter to the Editor..... 54
Roosevelt, The Late Dr. J. West..... 553, 589
Root, F. W. Letter to the Editor..... 591
Root, F. W. The True Medicinal Curative Dose of Sulphate of Morphine..... 516
Rose, A. An Historical Sketch of Greek..... 309
Rosenberg, J. Cardiac Disease during Pregnancy and Labor..... 77
Rupture of the Uterus, A Case of..... 150
Rupture, Radical Cure of, by the Intrapelvic Method..... 22

Sachs, B. A Family Form of Idiocy, etc..... 697
Saffron..... 562
Salacetol as a Remedy in Rheumatism and in Intestinal Diseases..... 468
Salicylic Acid as an Antipyretic..... 663
Saligenin in the Treatment of Acute Rheumatism..... 503
Salol and Antipyrine in the Treatment of Uterine Hæmorrhage..... 468
Salol, The Employment of, in the Treatment of Tuberculosis of the Bones..... 567
Salophen in Acute Articular Rheumatism..... 345
Salt, The Craving for..... 855
Sanaform, a New Substitute for Iodoform..... 721
Sanguinal..... 194
Sanitarium for Tuberculous Patients of the Marine-Hospital Service, The Arid-region..... 3
Santonin, The Passage of, into the Mammary Secretion..... 332
Sarcoma of the Scapula..... 389
Sarcoma, Primary, of the Orbit..... 508
Saunders, The Late Dr. Herbert, of Kingston, Ont..... 286
Scabies, Balsam of Peru in the Treatment of... 600, 617, 683, 752
Scapula, Sarcoma of the..... 389
Schamberg, J. F. The Diagnosis of Molluscum Contagiosum..... 151
Schell, W. A Year's Experience in the Use of Antitoxine in Private Practice..... 514
Scheppegrell, W. Papillomata of the Soft Palate..... 470
School and Hospital, The New York Post-graduate Medical..... 54, 64, 89, 154, 251 332, 652, 714, 750
School for Nurses, The New York Hospital Training..... 358
School for the Blind, The Batavia..... 288
School, The Chicago Post-graduate Medical..... 844
School, The New York Dental..... 296
Schwyzer, F. See Seibert, A..... 708
Sciatica, Nitroglycerin in the Treatment of. 273, 425
Sciatica, The Treatment of, by Compression... 300
Sclerosis, Primary Lateral, of the Spinal Cord.. 555
Scopolamine Hydrobromide..... 624
Scopolamine Hydrobromide in the Treatment of Plastic Iritis..... 399
Scopolamine Hydrochloride, The Value of, in testing Refraction..... 624
Scopolamine, The Hypnotic Action of, in the Insane..... 367
Scorpion Stings, Honey or Sugar in the Treatment of..... 789
Scotoma, Permanent Central, etc..... 620
Seabrook, H. H. The Eyes and the Liver..... 347
Seasickness, A Rational Treatment of..... 179
Secrecy, Professional..... 689
Sée, The Death of Professor Germain, of Paris. 714
Seibert, A. Letter to the Editor..... 90
Seibert, A., and Schwyzer, F. The Cause of Sudden Death after Antitoxine Injections.. 708
Self-infection, The Question of Puerperal..... 185
Semmola, The Death of Professor, of Naples... 553
Sepsis of the Newborn..... 185
Sepsis, The Treatment of Puerperal..... 845

PAGE

Septicæmia following Diphtheria; Treatment by Streptococcus Antitoxine..... 243
Septicæmia, The Treatment of Puerperal, by Anti-streptococcus Serum..... 259
Serotherapy, Observation on some Criticisms of 524
Serum, A Limited Experience with the Paul Paquin Antitubercle..... 15
Serum Agar-agar, Method of Preparing..... 530
Serum of Highly Immunized Animals, A Special Action of the..... 531
Serum, Paquin's Antitubercle, again..... 90
Serum, The Action of, on the Blood..... 722
Serum, The Paquin Antitubercle..... 19
Sexual Derangements in the Male, How to Diagnosticate..... 20
Sexual Organs, The Influence of Carbonic Acid on the..... 664
Schaffer, N. M. On the Question of Non-interference in Abscess of Chronic Tuberculous Disease of the Joints..... 265
Sheppard, J. E. Three Cases of Hysterical Mastoiditis..... 603
Shock, Surgical, and its Treatment..... 298
Shropshire, L. L. A Limited Experience with the Paul Paquin Antitubercle Serum..... 15
Sick Headache, The Treatment of..... 627
Simpson, F. T. A Case of Amnesic Aphasia... 279
Skinner, C. E. A Fatal Case of Chronic Nephritis..... 769
Skull, Some Novel Methods of Description of the Human..... 456
Skunk, The Secretion of the Anal Glands of the 855
Small-pox Patients, Curious Observations concerning..... 166
Small-pox, The Prevention of..... 125
Smegma as a Diagnostic Difficulty..... 651
Smith, E. D. Letter to the Editor..... 751
Smith, R. P. Compound Fracture of the Skull, with Loss of Brain Tissue..... 744
Snake-bite, The Treatment of, with Antivenene 628
Snake-bite, Treatment of..... 788
Societies, Meetings of Medical:
Association, American Medical..... 617, 652, 752
Association, American Surgical..... 784
Association, Missi sippi Valley Medical..... 19
Association of American Anatomists..... 156, 455
Association, Ontario Medical..... 845
College of Physicians of Philadelphia, Section in Ophthalmology..... 591
Society, American Gynæcological..... 786
Society, Medical, of the County of Oneida, N. Y..... 187
Society, Medical, of the State of New York.. 184, 251, 289, 424
Society of Alumni of Bellevue Hospital.. 55, 185, 217, 359, 388, 422, 457
Society of the Alumni of Charity Hospital... 23, 196, 555
Society, Tri-State Medical, of Alabama, Georgia, and Tennessee..... 121
Society, Tri-State Medical, of Iowa, Illinois, and Missouri..... 522
Society, A Pasteur..... 120
Society of McGill University, The New York Graduates'..... 421
Society of Medical Jurisprudence, The..... 182
Society, The American Gynæcological..... 628
Society, The American Laryngological, Rhinological, and Otological..... 529
Society, The Boston Gynæcological..... 88
Society, The Brooklyn Gynæcological..... 153
Society, The Brooklyn Medical..... 650, 811
Society, The German Medical, of the City of New York..... 153, 357, 468, 719
Society, The Indiana State Medical..... 683
Society, The Kentucky State Medical..... 788
Society, The Massachusetts Medical..... 695, 783
Society, The Medical, of New Jersey..... 789
Society, The Medical, of the State of New York 63, 531
Society, The Medical, of the State of Tennessee 497
Society, The Metropolitan Medical..... 351
Society, The Mitchell District Medical..... 550, 854
Society, The Nebraska State Medical..... 659, 760
Society, The New York Celtic Medical..... 282, 384, 550, 696
Society, The New York Pathological..... 196
Society, The, of Alumni of Charity Hospital... 88
Society, The, of Medical Jurisprudence..... 72
Society, The Ohio State Medical..... 662, 811
Society, The Ohio State Pædiatric..... 599
Society, The Tri-State Medical, of Iowa, Illinois, and Missouri..... 397
Society, The Washington State Medical..... 783
Society, The Western, of Eye, Ear, Throat, and Nose Surgeons..... 398, 589
Society, The Wisconsin State Medical..... 723
Solanum Paniculatum as a Remedy..... 664
Somatose..... 130
Somatose as a Galactagogue..... 856
Somatose in Diseases of the Gastro-intestinal Tract..... 32
Somers, L. S. Separation of the Nasal Cartilages..... 213
Sore Throats, Common..... 329
Spa, The Homburg..... 782
Spa, The Oeynhausen..... 695
Sparteine, The Antipyretic Action of..... 263
Spasm of the Pylorus..... 320
Späth, The Late Dr., of Vienna..... 520
Specialists and General Practitioners..... 601
Speculum, An Adjustable Self-retaining Nasal. 159
Spirit, The Essential Unity of, of the English-speaking Races..... 768

PAGE

Spivak, C. D. Kephir..... 82
Spleen, Enlarged..... 23
Sponge, The Gauze..... 54
Staphylococcus Epidermidis Albus, The Finding of the, in an Unexpected Manner..... 484
Stimulants..... 356
Stomach, Perforating Ulcer of the..... 390
Stomach, The Medical Treatment of Mechanical Insufficiency of the..... 695
Stomach, Toxines of the..... 253
Stovall, J. H., and Twitty, F. S. Letter to the Editor..... 555
Strabismus, The Results of the Operation for.. 619
Strabismus Theories..... 619
Stramonium Poisoning, Three Cases of, with Recovery..... 31
Stricture of the Urethra, Bicycle-riding as an Ætiological Factor in Prostatitis and..... 243
Strontium Salts in the Treatment of Albuminuria..... 130
Sturgis, F. R. Letter to the Editor..... 155
Stypticin in the Treatment of Uterine Hæmorrhage..... 91
Sugar, On Volumetric Testing for..... 115
Suggestion, An Unkind..... 421
Supporter, The Hoffa Abdominal..... 720
Suppositories, A Batch of, that "went Wrong" 182
Suprarenal Capsule, The Use of Extract of, in the Eye..... 647
Surgery, A Definition of the Scope of Orthopædic 793
Surgery, A Plea for Conservative Oral..... 833
Surgery, Complications in Abdominal, requiring Intestinal Anastomosis, etc..... 289
Surgery, Liability to Prosecution for Damages in Abdominal..... 787
Surgery of the Brain, The Present Status of the. 425
Surgery, Operative, at the City Hospital..... 569
Surgery, The Relation of Rectal, to other Specialties..... 105
Suture, The Technics of the Buried Tendon..... 12
Synthesis personified..... 120
Syphilis and its Treatment..... 21
Syphilis in Infants and Young Children, On Early and Latent..... 251
Syphilis, Nervous Manifestations of Hereditary. 252
Syphilis, The General Treatment of, in Private Practice..... 804

Tannalbin; a New Preparation of Tannin..... 532
Tannigen, The Use of, in the Diarrhœal Diseases of Children..... 432
Tannoform..... 725
Teeth, Congenital..... 660
Terms, A Matter of..... 489
Teschner, J. The Rapid Cure of Rotary-lateral Curvature of the Spine and other Postural Deformities..... 665
Testicle, The Treatment of Swelled..... 64
Tetanus following Repeated Injections of Morphine..... 759
Tetany, A Case of..... 742
Thalline as an Antipyretic..... 663
Thayer, C. C. Extra-uterine Hæmorrhage in Parturition..... 450
Thayer, W. S. Hypertrophic Pulmonary Osteoarthropathy and Acromegaly..... 33
Theobromine, The Diuretic Action of..... 164
Therapeutics, Dental..... 657
Therapeutics, The Study of Materia Medica and 576
Therapy, Some Criticisms of Serum..... 732
Thiol, Ichthyol and..... 263
Thiol, The Superiority of, to Ichthyol..... 842
Thiosinamine; a Treatment for "Inoperable" Tumors and Cicatricial Contractures..... 579
Thompson, R. A. Letter to the Editor..... 617
Thomson, W. H. Some Points in the Pathology and Treatment of Acute Bronchitis.... 634
Throat, Digital Examination in the Diagnosis and Treatment of Diseases of the..... 25
Throats, Common Sore..... 329
Thrombosis of the Popliteal and Tibial Arteries 378
Thyreoid Preparations, The Therapeutical Employment of..... 851
Tongue, Excision of the, for Cancerous Disease. 511
Tonsils, Chronic Diseases of the..... 509
Tooth Powders..... 130
Tousey, S. A Rational Treatment of Seasickness..... 179
Tousey, S. Thiosinamine; a Treatment for "Inoperable" Tumors and Cicatricial Contractures..... 579
Towel, The Bar-room..... 153
Townsend, C. W. A Case of Rupture of the Uterus..... 150
Townsend, W. W. Bicycle Riding upon Improperly fitting Saddles as an Ætiological Factor in Prostatitis and Stricture of the Urethra..... 243
Toxines and Antitoxines of Diphtheria and Tetanus, The Effect Produced upon Certain Animals by Injecting into the Rectum the.. 660
Toxines of the Stomach..... 253
Tracheotomy for Foreign Bodies..... 122
Trachoma, Some Notes on..... 426
Transplantation of a Strip of Skin into the Intermarginal Space of the Lids..... 496
Trichiasis, An Operation for..... 496
Trichiasis, The Radical Operative Treatment of 496
Trional in Epilepsy..... 495
Tubercular Disease? Shall the State Attempt to Control the Spread of..... 251
Tuberculosis..... 121
Tuberculosis by Ingestion, A Case of..... 850
Tuberculosis, Guaiacol in..... 264

PAGE

Tuberculosis, Observations in the Treatment of Surgical ... 525
Tuberculosis of the Bones, The Employment of Salol in the Treatment of ... 567
Tuberculosis of the Female Genital Organs ... 785
Tuberculosis of the Upper Air-passages, The Creosote Treatment of ... 604
Tuberculosis of the Wrist, Cantharidate of Potassium in the Treatment of ... 328
Tuberculosis, Prophylaxis in ... 48
Tuberculosis, The Hypodermic Use of Guaiacol in Acute Pulmonary ... 429
Tuberculosis, The Results of Serum Therapy in ... 732
Tuberculosis, Theory and Practice of the Counter-environmental Treatment of Pulmonary ... 612, 676
Tuberculous Disease, Human and Bovine ... 597
Tuberculous Pulmonary Disease, Inhalations of Iodine and Carbon Disulphide in ... 555
Tuley, H. E. Letter to the Editor ... 288
Tumors of the Lungs, The Diagnosis of Malignant ... 173, 214
Tumors of the Mouth, Potassium Chlorate in the Treatment of ... 503
Tumors, The Present State of our Knowledge of Cancers and ... 23
Tumors, The Serum Treatment of Malignant ... 792
Turck, F. B. The Improved Gyromele ... 191
Turck, F. B. Toxines of the Stomach ... 253
Tussol in the Treatment of Whooping-cough ... 468
Typhoid Fever, Acute Otitis Media as a Complication of ... 747
Typhoid Fever, Guaiacol Carbonate in the Treatment of ... 599
Typhoid Fever in Connecticut ... 18
Typhoid Fever, Laparotomy for Intestinal Perforation occurring in the Course of ... 43
Typhoid Fever, The Nature of the Laryngeal Complications of ... 532
Typhoid Fever, The Rational Treatment of ... 846
Tyson, J. Letter to the Editor ... 19

Ulcer of the Cornea, Observations on the Staphylococcous, and its Treatment ... 494
Ulcer of the Stomach, The Treatment of ... 467
Ulcer, Perforating, of the Stomach ... 390
Ulcers, Corneal, Bacteriological Investigations into the Ætiology of ... 494
Ulcers of the Leg ... 352
Ulcers of the Leg; All can be Cured ... 20
Ulcers, Tincture of Aloes in the Treatment of Varicose ... 532
Umbilical Cord, Ligation of the ... 195, 288
Umbilical Cord, The Treatment of the Stump of the ... 131
University, A Medical Department for the Ohio Wesleyan ... 810

PAGE

University, Aid to the Students of Columbia ... 852
University, Harvard, and the Harvard Medical College of Chicago ... 8 6
University of Buffalo, The Medical Department of the ... 358
University of Michigan, The ... 179
University of Minnesota, The ... 513
University, The, of the City of New York ... 613
University, The Ohio Medical ... 410
University, Valedictory Address to the Graduates in Comparative Medicine and Veterinary Science of McGill, Montreal ... 505
University, Yale ... 869
Ureters, Catheterism of the, in the Male and in the Female, etc ... 369
Urotropine ... 2-3
Urticaria, The Treatment of ... 163
Uterus, A Case of Rupture of the ... 150
Uterus, Abscess of the ... 100
Uterus, Bicornute ... 24
Uterus, The Surgical Treatment of Backward Displacements of the ... 315
Uterus, The Treatment of Fibroid Tumors of the ... 145
Uvula and Tonsils, Dickens on the ... 784

Vaccination, Albuminuria as a Result of ... 296
Valentine, F. C. Ureteral Catheterism ... 541
Van Fleet, F. On the Indications for the Use of Atropine in the Eyes ... 209
Vanillism, Ocular Manifestations of ... 621
Varix, Sacculated, of the Femoral Vein ... 390
Vaughan, G. T. A Case of Meckel's Diverticulum ... 808
Venous Phenomena ... 72, 110, 151
Ventrofixation of the Uterus, The Influence of, on Pregnancy and Labor ... 120
Vermont, The University of ... 250
Vertigo, Treatment of Labyrinthine ... 790
Veterans, The Confederate ... 606
Vineberg, H. N. The Surgical Treatment of Backward Displacements of the Uterus, etc. 315
Vinegar as an Antidote to ... 760
Virchow, Professor ... 100
Vision, The Field of, in Certain Cases of "Neglected Eyes" ... 621
Visual Sensations, Certain Subjective ... 622
Vivisection in the District of Columbia ... 588, 714, 752, 757, 790
Vivisection Question, The ... 529
Visitor, A, who is Wanted ... 88
Visual Impressions, The Recurrent Images following ... 494
Vivisection and Dissection in the Public Schools 394

Walton, G. E. Letter to the Editor ... 590
Warning, A ... 91

P

Water and its Relations to Disease ...
Water, Apenta ...
Water, The Uj Hunyadi Bitter ...
Waters, A Study of Highly Mineralized Thermal, etc ...
Weiland, C. On the Danger of Small Numbers for the Progress of Medicine ...
Wessinger, J. A. Organic Heart Lesions complicating Pregnancy ...
Whitaker, F. Paraldehyde in Asthma ...
White, A. J. Letter to the Editor ...
Whitman, R. A Definition of the Scope of Orthopædic Surgery, etc ...
Whitney, F. W. On Volumetric Testing for Sugar ...
Whooping-cough, Bromoform in the Treatment of ...
Whooping-cough in Adults, The Treatment of ...
Whooping-cough, Phenocoll in ...
Whooping-cough, Tussol in the Treatment of ...
Wight, J. S. A Pile Forceps and Hysterectomy Clamp ...
Wilder, B. G. Letter to the Editor ...
Williams, L. L. Injuries of Peripheral Nerves.
Wilson, N. L. Chronic Diseases of the Tonsils ...
Wilson, N. L. Purulent Discharges from the Middle Ear ...
Winter Resort, A Perfect ...
Woldert, E. A. A Case of Malarial Hæmatinuria, with a Study of the Plasmodium ...
Wolfe, S. Will Iron Cure Anæmia? ...
Women, Dysuria in ...
Wood, W. C. Accidental Miscarriage followed by Pelvic Inflammation, etc ...
Wound of the Parotid Region, An Arrow ...
Wound, Pistol-shot, of the Second and Third Cervical Vertebræ ...
Wright, J. Recent Laryngological and Rhinological Literature ... 165,

"X" and Other Light Rays, Crookes's ...
Xeroform, Another New Antiseptic ...
Xerostomia, or Dry Mouth, Report of Three Cases of ...
X-Ray Detection of Deformities of Bones ...
X Rays in Medicine ...

Yocom, J. R. The Treatment of Suppurating Glands by Radical Removal, etc ...

Zinc Chloride, The Treatment of Isolated Lupous Nodules by Dilaceration followed by Applications of ...
Zinc, Oleo-stearate of, a New Semifluid Product
Zinc, Sulphate of, in the Treatment of Anæmia.